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Appendices

Chula Vista urban core

September 2006

Appendix

Appendix A. Glossary

Appendix A. Glossary

The following glossary is provided primarily in support of the Urban Core Design Guidelines. For further definitions, please refer to Chula Vista Municipal Code Section 19.04.

#

360-degree Architecture
The full articulation of building facades on all four sides of a structure, including variation in massing, roof forms, and wall planes, as well as surface articulation. See four-sided architecture.

A

Access
An opening in a fence, wall or structure, or a walkway or driveway, permitting pedestrian or vehicular approach to or within any structure or use.

Accessibility
A means of approaching, entering, exiting, or making use of; passage. The right to approach, enter, exit, or make use of; often used in the form of disabled accessibility.

Adaptive Reuse
The reuse of older structures that would have otherwise been demolished, often involving extensive restoration or rehabilitation of the interior and/or exterior to accommodate the new use. (See also Recycling)

Addition
Any construction that increases the size of a building, dwelling, or facility in terms of site coverage, height, length, width, or gross floor area, occurring after the completion of the original.

Aesthetics
Characterized by a heightened sensitivity or appreciation of beauty and often discussed in conjunction with view impacts.

Alignment (Architectural)
The visual alignment and subsequent placement of architectural elements such as windows, cornice elements, soffits, awnings, from one structure to adjacent structures in order to promote continuity along a block.

Alley
A narrow street or passageway between or behind a series of buildings which affords only secondary access to abutting property.

Alteration
Any construction or substantial change in the exterior appearance of any building or structure.

Amenities
Something that contributes to physical or material comfort. A feature that increases attractiveness or value, especially of a piece of real estate or a geographic location.

Arcade
A roofed passageway or lane. A series of arches supported by columns, piers, or pillars, either freestanding or attached to a wall to form a gallery.

Arch
A curved structure supporting its weight over an open space such as a door or window.

Articulation
Describes the degree or manner in which a building wall or roofline is made up of distinct parts or elements. The small parts or portions of a building form that are expressed (materials, color, texture, pattern, modulation, etc.) and come together to define the structure. A highly articulated wall will appear to be composed of a number of different planes, usually made distinct by their change in direction (projections and recesses) and/or changes in materials, colors or textures.

Asymmetry
Irregular correspondence of form and configuration on opposite sides of a dividing line or plane or about a center or an axis; having unbalanced proportions.

Atrium
A dramatic enclosed glass-roofed indoor space typically associated with high-rise hotels and office buildings.

Attached
Joined to or by a wall, especially by sharing a wall with another building; not freestanding.

Awning
A fixed cover, typically comprised of cloth over a metal frame that is placed over windows or building openings as protection from the sun and rain.

Awning Sign
A sign painted on, printed on, or attached flat against the surface of an awning.

B

Balcony
A railed projecting platform found above ground level on a building.

Baluster
Any of the small posts that make up a railing, as in a staircase; may be plain, turned, or pierced.

Balustrade
A series of balusters surmounted by a rail.

Barrel Tiles
Rounded clay roof tiles most often used on Spanish-style houses. Usually red but are often available in may colors.

Bay (Structural)
A regularly repeated spatial element in a building defined by beams or ribs and their supports.

Bay Window
A window that projects out from an exterior wall.

Beautification
The transformation of barren or uninteresting spaces, buildings, forms, structures, into a comfortable or attractive place or environment.

Berm
An artificially raised area of soil or turf intended to screen undesirable attributes of a project or site.

Blockscape
The aggregated facade wall composed of uninterrupted placement of individual urban oriented structures located side-by-side along an entire block as opposed to individual buildings located within the block.

Bollards
A series of short posts of metal, concrete, or wood set at intervals to delineate an area or to exclude vehicles from an area.

Breezeway
A roofed area usually found between a garage and house proper or between commercial and industrial buildings and designed to provide shelter for outdoor comfort.

Buffer
A term often applied to landscaped areas separating incompatible land uses. Can also mean an area of a "transitional" land use that lies between two incompatible land uses.

Building
Any structure having a roof supported by columns or walls, used or intended to be used for the shelter or enclosure of persons, animals or property.

Building Frontage
The building elevation that fronts a public street where customer access to the building is available.

Building Height
The building height as measured from finish grade to top of roof, not including parapets or other architectural features.

Building Stepback
The minimum horizontal distance, as measured from the street property line, that the upper portion of a building must step back from the lower portion of the building; must occur at or below the noted building height.

Bulkhead
The space located between the pavement/sidewalk and the bottom of a traditional storefront window.

Business Frontage
The portion of a building frontage occupied by a single tenant space having a public entrance within the building frontage. For businesses located on the interior of a building without building frontage, the building elevation providing customer access should be considered the business frontage.

C

Canopy
A protective roof-like covering, often of canvas, mounted on a frame over a walkway or door or niche; often referred to as an awning.

Cantilever
A projecting element, such as a beam or porch, supported at a single point or along a single line by a wall or column, stabilized by counterbalancing downward force around the point of fulcrum.

Channel Letters
Three-dimensional individually cut letters or figures, illuminated or not illuminated, affixed directly to a structure.

Clerestory Window
A window (usually narrow) placed in the upper walls of a room to provide extra light.

Colonnade
A row of columns forming an element of an architectural composition, carrying either a flat-topped entablature or a row of arches.

Column
A vertical support, usually cylindrical, consisting of a base, shaft and capital, either monolithic or built-up, of drums the full diameter of the shaft.

Complement
In new construction, it means to add to the character of the area by attempting to incorporate compatible architectural styles, setbacks, height, scale, massing, colors, and materials.

Contextual
Relating to the existing built and natural environment.

Coping (Cap)
A flat cover of stone or brick that protects the top of a wall.

Corbel
1) A projecting wall member used as a support for some elements of the superstructure. 2) Courses of stone or brick in which each course projects beyond the course beneath it. 3) Two such structures, meeting at the topmost course creating an arch.

Cornice
The horizontal projection at the top of a wall or part of a roof which projects over the side wall and serves as a crowning member.

Court
1) An extent of open ground partially or completely enclosed by walls or buildings; a courtyard. 2) A short street, especially a wide alley walled by buildings on three sides. 3) A large open section of a building. 4) A large building, such as a mansion, standing in a courtyard.

Cupola
A small, dome-like structure, on top of a building to provide ventilation and decoration.

Curb Cut
The elimination of a street curb to enable increased access to crosswalks/ sidewalks, entry driveways or parking lots.

D

Deciduous
Trees or shrubs, usually in temperate climates, that shed leaves annually.

Dentil
A band of small, square, tooth-like blocks forming part of the characteristic ornamentation of the Ionic, Corinthian, and Doric orders.

Detached
Standing apart from others; separate or disconnected.

Detached Garage
A garage that is completely surrounded by open space or connected to a building by an uncovered terrace.

Detail
An element of a building such as trim, moldings, other ornamentation or decorative features.

Dormer Window
A vertical window which projects from a sloping roof placed in a small gable.

Downspout
A vertical pipe used to conduct water from a roof drain or gutter to the ground or cistern.

E

Eave
The projecting lower edge of a roof.

Eclectic
Selecting or employing individual elements from a variety of sources, systems, or styles.

Elevation
An orthographic view of the vertical features of a building (front, rear, side, interior elevation).

Enhancement
To make better either functionally or in appearance.

Espalier
A trellis of framework on which the trunk and branches of fruit trees or shrubs are trained to grow in one plane.

Eyebrow Window
A small, horizontal, rectangular window, often located on the uppermost story and aligned with windows below.

External illumination
The lighting of an object from a light source located a distance from the object.

F

FAR (Floor Area Ratio)
Floor Area Ratio (FAR) is a measure of the bulk of buildings on a lot or site. FAR is calculated by dividing the gross floor area of all buildings on a lot or site by the lot or site area. Gross floor area includes the total enclosed area of all floors of a building measured from the exterior walls including halls, stairways, elevator shafts at each floor level, service and mechanical equipment rooms, balconies, recreation rooms, and attics having a height of more than seven feet but excluding area used exclusively for vehicle parking or loading. (See Chapter VI - Land Use and Development Regulations for example FAR diagrams.)

Façade
The exterior face of a building, which is the architectural front, sometimes distinguished from other faces by elaboration of architectural or ornamental details.

Fascia
The outside horizontal board on a cornice.

Faux
A simulation or false representation of something else, as in faux wood or stone.

Fenestration
The stylistic arrangement of windows in a building.

Fieldstone
A stone used in its natural shape and condition.

Figurative Sign
A sign utilizing a three dimensional object to communicate the business product or services.

Fixture
A design element considered to be permanently established or fixed in its built or natural environment.

Focal Point
A building, object, or natural element in a street-scene that stands out and serves as a point of focus, catching and holding the viewer's attention.

Four-sided Architecture
The full articulation of building facades on all four sides of a structure, including variation in massing, roof forms, and wall planes, as well as surface articulation. See 360-degree architecture.

G

Gable Roof
A ridge roof that slopes up from only two walls. A gable is the vertical triangular portion of the end of a building from the eaves to the ridge of the roof.

Gambrel
A roof where each side has two slopes; a steeper lower slope and a flatter upper one; a 'barn roof'. Often found in Colonial revival houses in the "Dutch" style.

Glazed Brick
A brick that has been glazed and fired on one side.

Gutter
A shallow channel of metal or wood that is set immediately below and along the eaves of a building for catching and carrying rainwater from the roof.

H

Hardscape
Areas which water does not easily penetrate; surfaces that are not landscaped, i.e., sidewalks, streets, building pads, etc.

Hedge
A row of closely planted shrubs or low-growing trees forming a fence or boundary.

Hipped (Hip Roof)
A roof with four uniformly pitched sides.

Historic
Having importance in or influence on history.

Homogeneity
The state or quality of being the same.

I

Infill
A newly constructed building within an existing development area.

Internally Illuminated Sign
A sign whose light source is located in the interior of the sign so that rays shine through the face of the sign, or a light source that is attached to the face of the sign and is perceived as a design element of the sign.

J

K

Kicker
A piece of wood that is attached to a formwork member to take the thrust of another member.

L

Landmark

A building or site that has historical significance, especially one that is marked for preservation.

Landscaping
An area devoted to or developed and maintained with indigenous or exotic planting, lawn, ground cover, gardens, trees, shrubs, and other plant materials, decorative outdoor landscape elements, pools, fountains, water feature, paved or decorated surfaces of rock, stone, brick, block, or similar material (excluding driveways, parking, loading, or storage areas), and sculpture elements. Plants on rooftops, porches or in boxes attached to buildings are not considered landscaping for purposes of meeting minimum landscaping requirements. Additional guidance regarding acceptable landscaping elements is provided in Chapter VII - Development Design Guidelines.

Lattice
A grillwork created by crisscrossing or decoratively interlacing strips of material.

Level of Service (LOS)
A qualitative measure describing operational conditions within a traffic stream in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Labeled on a continuum from A to F, Level A denotes the best traffic conditions while Level F indicates traffic gridlock.

Light Trespass
Extraneous light on adjacent property, typically produced by stray light from outdoor lighting systems

Lintel
A horizontal support member that supports a load over an opening, as a window or door opening, usually made of wood, stone or steel; may be exposed or obscured by wall coverings.

Loading Space
An area used exclusively for the loading and unloading of goods from a vehicle in connection with the use of the site on which such space is located.

Loft
A large, usually unpartitioned floor over a factory, warehouse, or other commercial or industrial space. An open space under a roof; an attic or a garret. This is also a type of housing product.

Lot
A piece or parcel of land occupied or intended to be occupied by a principal building or a group of such buildings and accessory buildings, or utilized for a principal use and uses accessory thereto, together with such open spaces, and having frontage on a public or an approved private street.

Lot Coverage
Lot coverage is the percentage of a lot or site covered by buildings.

Lumen
The rate of flow of light used to express the overall light output of a lamp.

M

Maintenance
The work of keeping something in proper condition; upkeep.

Mansard
Traditionally a hip roof, each face of which has a steeper lower part and a shallower upper part. In contemporary commercial development, the second portion of the roof is replaced with a flat roof or equipment well. These are referred to as mansard roofs but bear little resemblance to the original.

Masonry
Wall construction of such material as stone, brick and adobe.

Mass
Mass describes three-dimensional forms, the simplest of which are cubes, boxes (or "rectangular solids"), cylinders, pyramids and cones. Buildings are rarely one of these simple forms, but generally are composites of varying types of assets. This composition is generally described as the "massing" of forms in a building.

Mixed-Use
Mixed-use developments combine different types of land uses or structures (such as commercial/office and residential uses) on a single-lot, or as components of a single development. The uses may be combined either vertically within the same structure or spread horizontally on the site in different areas and structures.

Monolithic
A single large flat surface (facade) without relief. A massive unyielding structure.

Monument Sign
Permanent signs where the entire bottom of the sign is affixed to the ground, not to a building.

Mullions
The divisional pieces in a multi-paned window.

Muntin
Wood or metal strips separating panels in a window.

N

Neon Sign
Glass tube lighting in which a combination of gas and phosphors are used to create colored light.

Newel
The terminating baluster at the lower end of a handrail.

Niche
A recess in a wall.

O

Open Space
For the purposes of the open space requirement, the term "open space" refers to any areas with minimum dimensions of 60 square feet (6'x10') and devoted to the following common, private, or public uses: patio, porch, balcony, deck, garden, playground, plaza, swimming pool, sports court/field, recreation room, gym, spa, community room, cultural arts, lawn/turf, pond, fountain, atrium, sunroom, theater, amphitheater, band shell, gazebo, picnic area, shelter, roof, or similar passive or active recreational/leisure use or facility that is not used for enclosed dwelling unit floor area or commercial use space.

Ornamentation.
Details added to a structure solely for decorative reasons (i.e. to add shape, texture or color to an architectural composition).

Outbuilding
An auxiliary structure that is located away from a house or principal building (e.g. garage, studio, guest house, shed).

P

Parapet
A low retaining wall at the edge of a roof, porch, or terrace.

Parking
An open area used for the purpose of storing an automobile, usually for a temporary time period.

Parkway
The public area between the curbing and the sidewalk.

Paseo
A place that allows for a pedestrian to take a slow, easy stroll or walk outdoors and often between buildings; often covered or partially covered, the path, series of paths, or walkway along which such a walk is taken.

Pattern
The pattern of material can also add texture and can be used to add character, scale and balance to a building. The lines of the many types of brick bonds are examples of how material can be placed in a pattern to create texture.

Pediment
The low triangular gable following the roof slopes over the front and rear of a building; also used to crown features such as doors and windows.

Pergola
An arbor formed of horizontal trelliswork supported on columns or posts, over which vines or other plants are trained.

Permeable Paving
Paving material that allows the passage of water between and through voids in its surface.

Pedestrian-scale
Refers to building and landscape elements that are modest in size; suitable to average human size.

Permanent Sign
A sign constructed of durable materials and intended to exist for the duration of time that the use or occupant is located on the premises.

Pier
A vertical, non-circular masonry support, more massive than a column.

Pilaster
A rectangular column with a capital and base, set into a wall as an ornamental motif.

Pillar
Similar to but more slender than a pier, also non-circular.

Pitch
The slope of a roof expressed in terms of ratio of height to span.

Platted
A piece of land; a plot. A map showing actual or planned features, such as streets and building lots.

Plaza
A public square with room for pedestrians and associated activities.

Pocket Park
A very small, lushly landscaped open space often nestled between residential homes, and intended for limited use by local residents only.

Pole Sign
A sign mounted on a freestanding pole or other support so that the bottom edge of the sign face is six feet or more above finished grade.

Pop-out
Applied to exterior walls, pop-outs create shadow patterns and depths on the wall surfaces.

Porch
A covered entrance or semi-enclosed space projecting from the facade of a building, usually having a separate roof. An open or enclosed gallery or room attached to the outside of a building; a veranda.

Portico
A porch or vestibule (lobby or passage between entrance and lobby) roofed and partly opened on at least one side.

Preservation
Places a high premium on the retention of all historic fabric through conservation, maintenance and repair. It reflects a building's continuum over time, through successive occupancies, and the respectful changes and alterations that are made. Standards focus attention on the preservation of those materials, features, finishes, spaces, and spatial relationships that, together, give a property its historic character.

Primary Building Façade
The particular facade of a building that faces the street to which the address of the building pertains.

Project
Any proposal for new or changed use, or for new construction, alteration, or enlargement of any structure that is subject to the provisions of this manual.

Projecting Sign
A sign that protrudes horizontally from the facade of a building, usually at a 90-degree angle to the building..

Promenade
A public place to take a leisurely walk for pleasure, such as an avenue.

Proportion
The relationship of size, quantity, or degree between two or more things or parts of something. Proportion can describe height-to-height ratios, width-to-width ratios, and width-to-height ratios, as well as ratios of massing. Landscaping can be used to establish a consistent rhythm along a streetscape, which will disguise the lack of proportion in building size and placement.

Public Art
Any sculpture, fountain, monument, mural or other form of art located in a public space or private space open to public view.

Q

R

Recess
A hollow place, as in a wall.

Reconstruction
Establishes limited opportunities to re-create a non-surviving site, landscape, building, structure, or object in all new materials.

Recycling
The reuse of older structures that would have otherwise been demolished, often involving extensive restoration or rehabilitation of the interior and/or exterior to accommodate the new use. (See also Adaptive Reuse.)

Refuge Island

A defined area between traffic lanes that provides a safe place for pedestrians to wait when crossing the street.

Rehabilitation
Emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it is assumed the property is more deteriorated prior to work. Standards focus attention on the preservation of those materials, features, finishes, spaces, and spatial relationships that, together, give a property its historic character.

Relief
Carving raised above a background plane, as in base relief.

Remodeling
Any change or alteration to a building that substantially alters its original state.

Renovation
The modification of or changes to an existing building in order to extend its useful life or utility through repairs or alterations.

Restoration
Focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods.

Return
A surface turned back from a principal surface, such as the side of pilaster or the jamb of a window or door opening.

Reuse
To use again, especially after salvaging or special treatment or processing.

Reveal
The vertical side section of a doorway or window frame.

Rhythm
In urban design, the regular recurrence of lines shapes, forms, elements, colors, or other architectural or natural elements, usually within a proportional system, such as even placing of trees down a street or similar widths and heights of buildings in a street block.

Ridge
The horizontal line formed by the juncture of two sloping planes, especially the line formed by the surfaces at the top of a roof.

Right-of-way
Land that has been established by reservation, dedication, prescription, condemnation, or other means and that is occupied by a road, walkway, railroad, utility distribution or transmission facility, or other similar use.

Rise
The vertical distance from one stair tread to the next.

Riser
The vertical portion of a step. The board covering the open space between stair treads.

Rooflines
Various forms to a roof, such as pitch, ridge, hip, etc., often at different angles.

Roof Pitch
Degree of roof slant stated in inches rise per foot.

Roof Span
The distance equal to twice the roof run, or the horizontal distance between the outside faces of bearing wall plates.

Roofscape
The collective image of rooflines and roof styles of adjacent buildings and structures as seen against the sky.

Row Townhouse
An unbroken line of houses sharing one or more sidewalls with its neighbors.

Rustication
A method of forming stonework with recessed joints and smooth or roughly textured block faces.

S

Sash
The framework into which windowpanes are set.

Scale
The proportion of one object to another. "Pedestrian" or "human" scale incorporates building and landscape elements that are modest in size. "Monumental" scale incorporates large or grand building elements.

Screening
A method of visually shielding or obscuring a structure, or portion of, by a fence, wall, berm, or similar structure.

Setback
The distance between the property line and the building, measured horizontally and perpendicular to the property line.

Shed Roof
A roof shape having only one sloping pane.

Shutter
A movable cover for a window used for protection from weather and intruders.

Side Loading Garage
An accessory building or portion of a principal building, located and accessed from the side of such and designed or used for the parking or temporary storage of the motor vehicles of principal building occupants.

Sidewalk
A paved walkway along the side of a street.

Siding
The finish covering on the exterior of a frame building (with the exception of masonry). The term cladding is often used to describe any exterior wall covering, including masonry.

Skyline
The upper outline or silhouette of a building, buildings, or landscape as seen against the sky.

Sill
The framing member that forms the lower side of an opening, such as a doorsill. A windowsill forms the lower, usually projecting, lip on the outside face of a window.

Sign
Please refer to Chula Vista Municipal Code Section 19.04. Supplemental definitions are provided in Chapter VII - Development Design Guidelines.

Site
A lot, or group of contiguous lots not divided by an alley, street, other right-of-way, or city limit that is proposed for development in accord with the provisions of this manual, and is in a single ownership or has multiple owners, all of whom join in an application for development.

Soffit
The underside of a beam, arch, eave, overhang, dropped ceiling, etc.

Spandrel Glass
Non-vision glass, available in reflective, patterned, and solid colors. Can be used to give the appearance of having windows.

Spark Arrester
A device that is located at the top of a chimney used to prevent sparks, embers, or other ignited material above a certain size from being expelled to the atmosphere.

Stoop
A small porch, platform, or staircase leading to the entrance of a house or building.

Storefront
The side of a store or shop facing a street. The traditional "main street" facade bounded by a structural pier on either side, the sidewalk on the bottom and the lower edge of the upper facade on top, typically dominated by retail display windows.

Stormwater
Water running on the surface of the ground due to rainfall from a storm event.

Story
That portion of a building included between the surface of any floor and the floor or ceiling next above it.

Streetscape
The overall appearance of a street or grouping of streets in an area and/or the relationship of buildings to the surrounding sidewalk and streets.

Street Wall
The edges created by buildings and landscaping that enclose the street and create space.

Street Wall Frontage
The percentage of street front that must be built to, with the ground floor building façade at the minimum setback.

Structure
Anything constructed, the use of which requires permanent location on the ground, or attachment to something having a permanent location on the ground, excluding swimming pools, patios, walks, access drive, or similar paved areas.

Stucco
A durable finish for exterior walls, usually composed of cement, sand, and lime and applied while wet. A fine plaster for interior wall ornamentation, such as moldings.

Surface Materials
Can be used to create a texture for a building - from the roughness of stone or a ribbed metal screen to the smoothness of marble or glass. Some materials, such as wood, may be either rough (such as wood shingles or re-sawn lumber) or smooth (such as clapboard siding).

Surround(s)
The molding that outlines an object or opening.

Symmetry
Exact correspondence of form and configuration on opposite sides of a dividing line or plane or about a center or an axis; having balanced proportions.

T

Temporary Sign
Any sign intended to be displayed for a limited period of time and capable of being viewed from any public right-of-way, parking area, or neighboring property.

Texture
Texture refers to variations in the exterior facade and may be described in terms of roughness of the surface material, the patterns inherent in the material or the patterns in which the material is placed. Texture and lack of texture influence the mass, scale, and rhythm of a building. Texture also can add intimate scale to large buildings by the use of small detailed patterns, such as brick masonry.

Tower
Any floor above the defined street wall height used for framing the street.

Traffic
The passage of people, vehicles, or messages along routes of transportation or communication. Vehicles or pedestrians in transit.

Traffic Calming
Techniques that are used to reduce the speed of vehicular traffic, such as lane narrowing, sharp offsets, sidewalk bulge-outs, speed bumps, and road surface variations.

Transit
Conveyance of people or goods from one place to another, especially on a local public transportation system.

Transition
A change from one place or state or stage to another. In an urban planning context, a "transition" could describe a step in scale of one development to another.

Transom
A small window just above a door.

Trash Receptacle
A fixture or container for the disposal of garbage. Sometimes ornamental in nature.

Trellis
A system of horizontal joists supported on posts, often designed to support growing plants.

Trim
The decorative finish around a door or window; the architrave or decorative casing used around a door or window frame. Any visible woodwork or moldings that cover or protect joints, edges, or ends of another material. Examples: baseboards, cornices, door trim, and window trim.

Turf Island
A landscaped area located at the base of a building to buffer the hard edge of a building from a paved surface.

Turret
A small tower, often at the corner of a building.

U

Use
The purpose for which the land or a building is arranged, designed, or intended to be used and for which it is or may be used.

V

Valley
A low region on a roof between gables.

Veneer
A thin facing of finishing material.

Veneer Wall
The covering of wall construction by a second material to enhance wall beauty, i.e., brick or stone over frame, brick or stone over concrete block.

W

Wall Sign
A sign that is attached to or painted on the exterior wall of a structure with the display surface of the sign approximately parallel to the building wall.

Window Sill
The flat piece of wood, stone, or the like, at the bottom of a window frame.

Window Sign
A sign posted, painted, placed, or affixed in or on a window exposed to public view. An interior sign that faces a window exposed to public view that is located within three feet of the window is considered a window sign for the purpose of calculating the total area of all window signs.

Window Types

- *Awning - Top hinged.*
- *Bay - Extends beyond the exterior face of the wall.*
- *Bow - Projected window with a curved surface often in the glass itself.*
- *Casement - Side hinged.*
- *Combination - The integration of two or more styles into one unit.*
- *Double Hung - Two sash, vertical sliding.*
- *Hopper - Bottom hinged.*
- *Horizontal sliding - Two or more sashes designed to slide over one another.*
- *Jalousie - Glass slats (Venetian blind principle) with hand crank to open.*
- *Oriel - Windows that project from an upper story, supported by a bracket.*
- *Picture Window - Fixed sash.*

X

Y

Z

Appendix B. Traffic Analysis

FINAL Traffic Impact Analysis

Chula Vista Urban Core

October 2005

Prepared for:
RRM Design Group

Project No. 095413000

FINAL Traffic Impact Analysis

Chula Vista Urban Core

October 2005

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1.0 INTRODUCTION

This study evaluates the potential traffic-related impacts associated with the adoption of the Chula Vista Urban Core Specific Plan. This study determines the appropriate geometric design of the urban arterials, as defined in the Chula Vista General Plan. In addition, this study will recommend improvements to achieve acceptable LOS for any potential traffic impacts associated with the project. This study will serve as the traffic impact analysis for future redevelopment projects consistent with the Urban Core Specific Plan.

Project Description

The Chula Vista Urban Core is located in the northwestern portion of the City of Chula Vista, California. **Figure 1-1** illustrates the project study area in a regional context. The Urban Core Specific Plan (UCSP) Study Area covers approximately 1,700 acres within the northwestern portion of the City of Chula Vista. It is generally bordered by the San Diego Freeway (I-5) to the west, C Street to the north, Del Mar Street to the east, and L Street to the south. While there are 1,700 acres within the UCSP Study Area, it was determined that the proposed changes to land use designations be focused on areas more in need of revitalization. Therefore, the Specific Plan boundary focuses on the development and redevelopment of approximately 690 gross acres within the larger UCSP Study Area. **Figure 1-2** illustrates both the UCSP Study Area and the Focus Area.

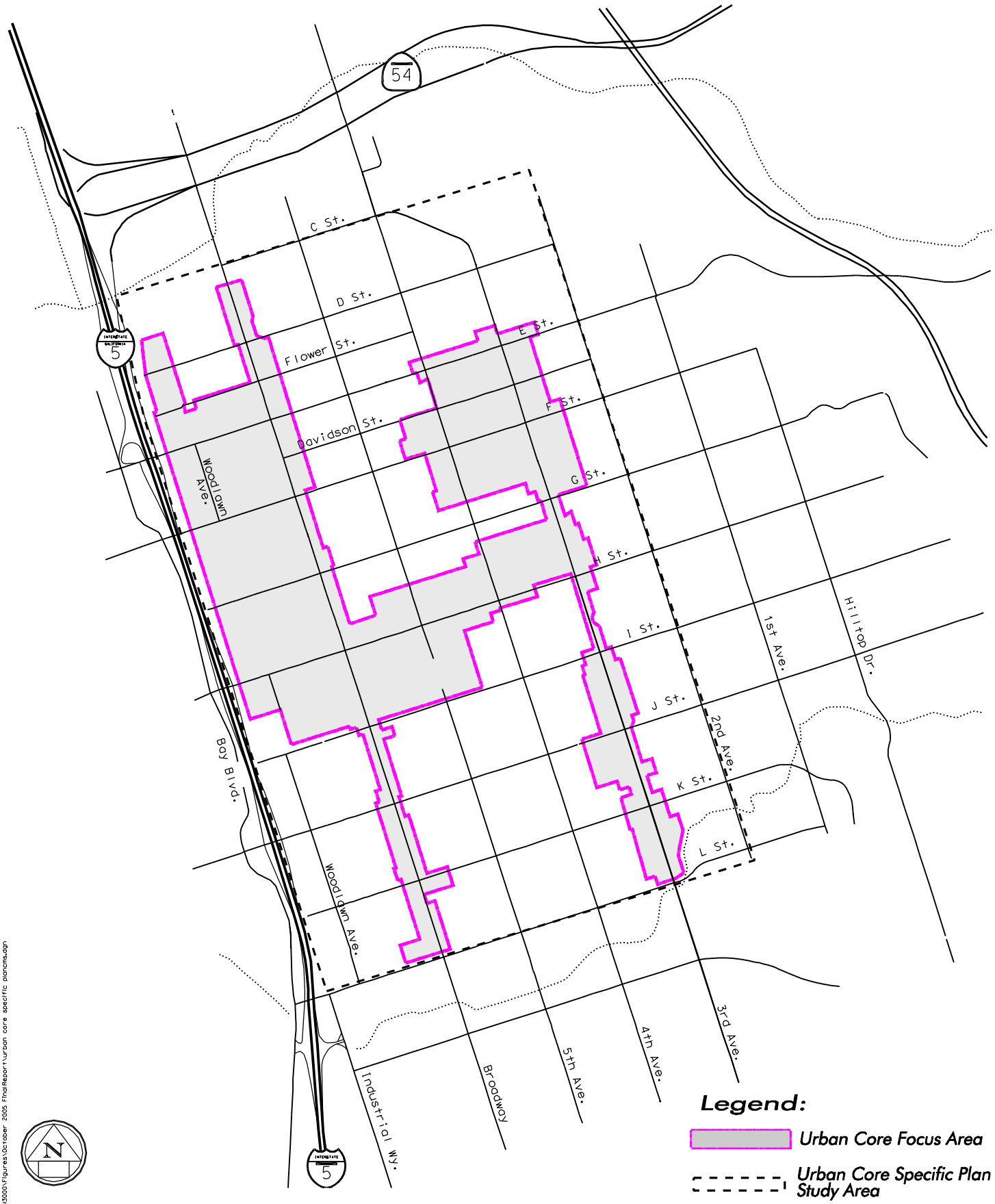
Analysis Scenarios

A total of three scenarios were analyzed as part of the Urban Core project, which are listed below:

- ***Existing Conditions***
  - Existing Conditions: Represents the traffic conditions of the existing street network, primarily in the Urban Core Focus Area, but also includes key intersections and roadway segments within and near the Urban Core Specific Plan Study Area.
- ***Year 2030***
  - Year 2030 Conditions: Represents the traffic conditions of the street network consistent with the adopted general plan update, implementation of the regional transit vision, and full build-out of the Urban Core.
  - Year 2030 With Improvements Conditions: Represents the traffic conditions of the street network with improvements to several roadways and intersections.

It should be noted that due to urban revitalization, the timing, sequencing, and the extent of development is not predictable and is speculative. The Urban Core Specific Plan covers a large geographic area, which could redevelop in many different ways. As a result, the intermediate years were not analyzed; only the full buildout of the Urban Core was analyzed. As such, the impacts resulting from the full buildout of the Urban Core would be considered cumulative impacts.


Miramar Rd
805
15
Marine Corps Air Station Miramar
Santee Lakes
Mast Blvd
Lakesi
67
Santee
Pepper Dr
52
125
Ruffin Rd
Aero Dr
274
Mission Gorge Rd
Fanita Dr
Navajo Rd
Pkwy
Bosto
SAN DIEGO
Murray Reservoir
El Cajon
163
Fiesta Island
Friars Rd
San Diego
Montezuma Rd
Fuente Dr
54
La Mesa
Casa de Oro
Spring Valley
CALIFORNIA
Lemon Grove
209
Nimitz Blvd
N Harbor Dr
5th Ave
54th St
Chollas Reservoir
94
B St
San Diego
Market St
Imperial Ave
S17
Skyline Dr
North Island
Coronado
Paradise Valley Rd
Sweetwater Reservoir
75
National City
Lincoln Acres
San Diego Bay
Bonita
Chula Vista
E H St
Otay Lakes Rd
Pacific Ocean
4th Ave
Hilltop Dr
Cleveland Ave
Imperial Beach
Main St
Palm Ave
Brown Field Municipal Airport
905
Imperial Beach Naval Air Station
San Ysidro Larsen Field
Tijuana
BAJA CALIFORNIA
Urban Core Specific Plan
N



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KIMLEY-HORN and ASSOCIATES

Figure 1-2

Urban Core Specific Plan

2.0 METHODOLOGY

The following section describes the methodology used in the determination of study intersections, analysis process, and determination of significant impacts.

Study Intersections

The Urban Core is located in the Northwest Planning Subarea, located south of SR-54, west of I-805, north of L Street, and east of I-5. More specifically, the Urban Core Specific Plan is bounded by C Street, Del Mar Avenue, L Street, and I-5. The following intersections shown in **Table 2-1** were identified for evaluation. These intersections represent all key intersections in the Urban Core Specific Plan and others that could be influenced by land use intensifications within the Urban Core.

TABLE 2-1
STUDY INTERSECTIONS

	Intersection	Traffic Control (a)
1	Bay Blvd-I-5 SB Ramp @ E St (b)	Signal
2	I-5 NB Ramp @ E St	Signal
3	Woodlawn Ave @ E St	Signal
4	Broadway @ E St	Signal
5	5th Ave @ E St	Signal
6	4th Ave @ E St	Signal
7	3rd Ave @ E St	Signal
8	2nd Ave @ E St	Signal
9	1st Ave @ E St (b)	Signal
10	Flower St @ E St (b)	Signal
11	Bonita Glen Dr @ Bonita Rd (b)	Signal
12	Bay Blvd @ F St (b)	AWSC
13	Broadway @ F St	Signal
14	5th Ave @ F St	Signal
15	4th Ave @ F St	Signal
16	3rd Ave @ F St	Signal
17	2nd Ave @ F St	Signal
18	Broadway @ G St	Signal
19	5th Ave @ G St	Signal
20	4th Ave @ G St	Signal
21	3rd Ave @ G St	Signal
22	2nd Ave @ G St	AWSC
23	Hilltop Dr @ G St (b)	AWSC
24	I-5 SB Ramp @ H St	Signal
25	I-5 NB Ramp @ H St	Signal

Notes:
(a) Signal = Traffic signal, AWSC = All-way Stop Control, TWSC = Two-way Stop Control
(b) Outside of Urban Core Specific Plan study area, but due to proximity and ingress/egress patterns, these intersections were included as part of the study area.

TABLE 2-1
STUDY INTERSECTIONS (Continued)

	Intersection	Traffic Control (a)
26	Woodlawn Ave @ H St	Signal
27	Broadway @ H St	Signal
28	5th Ave @ H St	Signal
29	4th Ave @ H St	Signal
30	3rd Ave @ H St	Signal
31	2nd Ave @ H St	Signal
32	1st Ave @ H St (b)	Signal
33	Hilltop Dr @ H St (b)	Signal
34	Broadway @ SR-54 WB Ramp (b)	Signal
35	Broadway @ SR-54 EB Ramp (b)	Signal
36	Broadway @ C St	Signal
37	Broadway @ D Street	Signal
38	Broadway @ Flower St	Signal
39	Broadway @ I St	Signal
40	Broadway @ J St	Signal
41	Broadway @ K St	Signal
42	Broadway @ L St	Signal
43	4th Ave @ SR-54 WB Ramp (b)	Signal
44	4th Ave @ SR-54 EB Ramp (b)	Signal
45	4th Ave @ Brisbane St (b)	Signal
46	4th Ave @ C St	Signal
47	4th Ave @ D St	Signal
48	4th Ave @ I St	Signal
49	4th Ave @ J St	Signal
50	4th Ave @ K St	Signal
51	4th Ave @ L St	Signal
52	3rd Ave @ Davidson St	Signal
53	3rd Ave @ I St	Signal
54	3rd Ave @ J St	Signal
55	3rd Ave @ K St	Signal
56	3rd Ave @ L St	Signal
57	2nd Ave @ D St	AWSC
58	J St @ I-5 SB Ramp	Signal
59	J St @ I-5 NB Ramp	Signal
60	Woodlawn Ave @ J St	TWSC
61	L St @ Bay Blvd	TWSC
62	L St @ Industrial Blvd	Signal
63	Bay Blvd @ I-5 SB Ramp (b)	TWSC
64	Industrial Blvd @ I-5 NB Ramp (b)	AWSC

Notes:
(a) Signal = Traffic signal, AWSC = All-way Stop Control, TWSC = Two-way Stop Control
(b) Outside of Urban Core Specific Plan study area, but due to proximity and ingress/egress patterns, these intersections were included as part of the study area.

As shown in Table 2-1, 56 signalized intersections exist near and within the Urban Core Specific Plan study area under existing conditions. It should be noted that intersections 1, 9 through 12, 23, 32 through 35, 43 through 45, 63, and 64 are outside of the Urban Core Specific Plan study area, but are included in the analysis due to the proximity and ingress/egress patterns. **Figure 2-1** displays the location of the study intersections.

Analysis Process

The analysis process includes determining the operations at the study intersections for the a.m. and p.m. peak-hours and operations on roadway segments using ADT volumes. Intersections will be measured and quantified by using the Synchro traffic analysis software package. Roadway segments will be measured based on each segment's volume and assigned capacity. Results will be compared to the City's standards to determine the level of service (LOS).

Analysis Software

To analyze the operations of both signalized and unsignalized intersections, Synchro 6 (Trafficware) was used for the analysis. Synchro 6 uses the methodologies outlined in the 2000 *Highway Capacity Manual (HCM)*.

The default peak-hour factor (PHF) of 0.92 was used for the Existing Conditions and Year 2030 scenarios. Under the Year 2030 scenario, all signal timings and phasings at the study intersections were optimized as a network and a common cycle length was selected at all intersections. Also, it should be noted that at each interchange, the two ramp intersections were optimized separately and assumed to be coordinated.

Signalized Intersections

The 2000 *HCM* published by the Transportation Research Board establishes a system whereby highway facilities are rated for their ability to process traffic volumes. The terminology "level of service" is used to provide a "qualitative" evaluation based on certain "quantitative" calculations, which are related to empirical values.

LOS for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The criteria for the various levels of service designations are given in **Table 2-2**.

TABLE 2-2
LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS

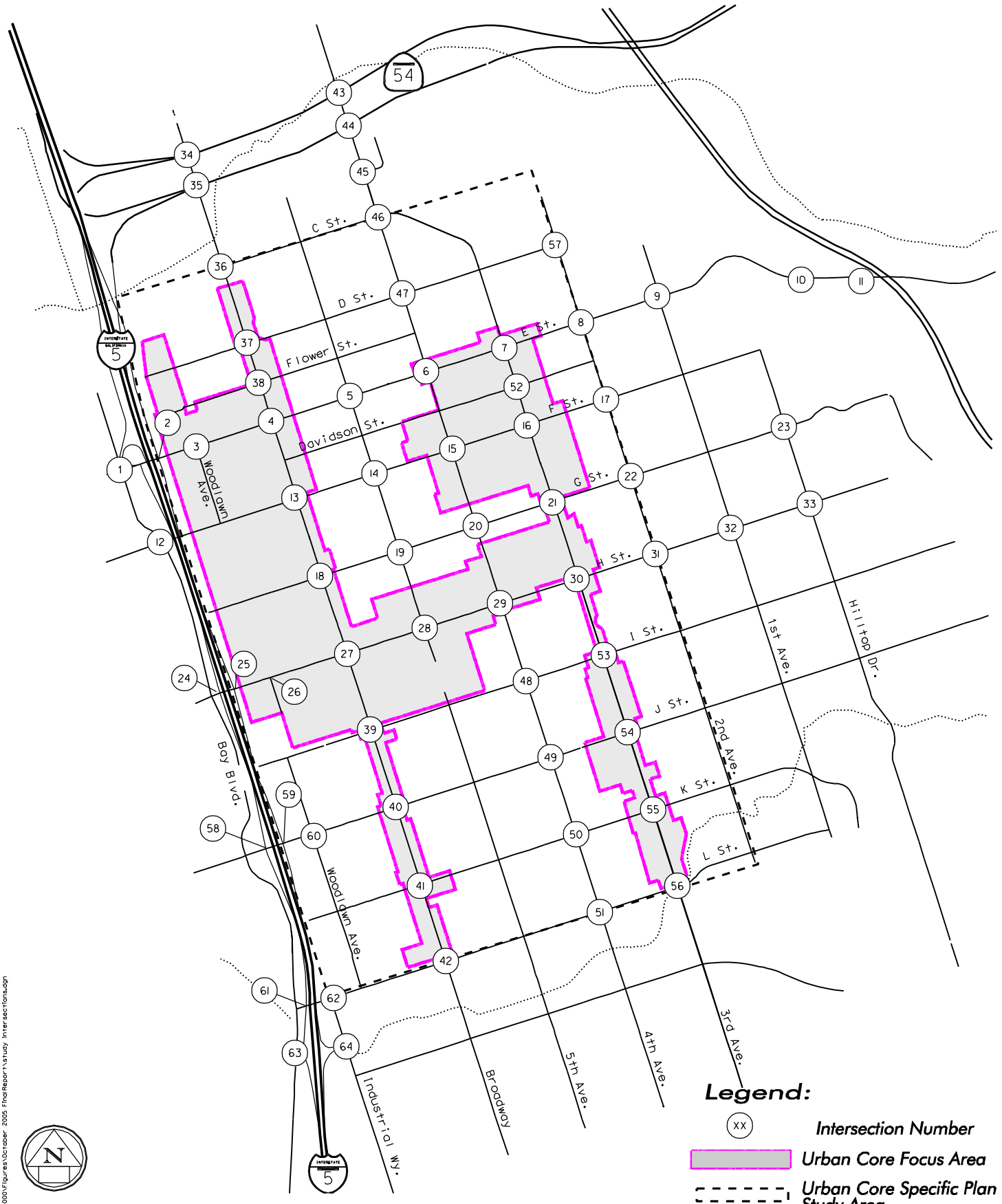
LOS	Control Delay (sec/veh) (a)	Description
A	≤10.0	Operations with very low delay and most vehicles do not stop.
B	<10.0 and <20.0	Operations with good progression but with some restricted movement.
C	>20.0 and <35.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and <55.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55.0 and <80.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2

Effects of At-Grade Trolley Crossings

As part of the General Plan Update transportation analysis, the effects of the trolley grade crossings at E Street and H Street were evaluated. The analysis replicated the effects of a trolley/rail crossing by assuming a signal at the trolley crossings. A summary of this analysis is included as an attachment to this report (see **Appendix A**). The analysis assumed that a trolley would cross once per every five minutes, using current trolley service and once every two and a half minutes using planned service increases. Field observations indicate that the trolley crossing guards stay down for about 54 seconds. This means that one-sixth of the time, the trolley crossings are down and with future service enhancements, the trolley crossing guards are down one-third of the time.

With the trolley crossings down, queues would start to form in the east-west direction and extend into adjacent intersections. This would cause additional delays and affect the operations at each impacted intersection. As such, delays shown in the respective intersection summary tables for the intersections affected by the trolley crossings would be increased between 17 and 40 seconds per vehicle, causing a drop in LOS grade.



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KIMLEY-HORN and ASSOCIATES

Figure 2-1

Study Intersections

Roadway Segments

In order to determine the LOS for a street segment on a daily basis, the average daily traffic (ADT) volume is compared to its maximum acceptable volume for each type of roadway (arterial, collector, etc.) in the City. The roadway segment capacities of Circulation Element roadways (Class I Collectors and above) were evaluated under existing and proposed conditions using LOS thresholds published by the City of Chula Vista's adopted General Plan. Volume-to-Capacity (v/c) ratios were calculated for each segment. It should be noted that the capacity of a roadway is equal to the maximum LOS E volume, but the LOS is based on the acceptable volume for each respective type of facility. **Table 2-3** summarizes the acceptable volumes with its corresponding LOS for each Circulation Element and Urban Core Circulation Roadway. A more detailed discussion related to the development of the Urban Core Circulation Element is contained in Section 1.2 of the 2005 adopted General Plan.

TABLE 2-3
ROADWAY SEGMENT CAPACITY AND LEVEL OF SERVICE

FACILITY		ACCEPTABLE LOS	LEVEL OF SERVICE (LOS)				
CLASS (a)	LANES		A	B	C	D	E
CIRCULATION ELEMENT ROADWAYS							
Expressway	7/8	C	52,500	61,300	70,000	78,800	87,500
Prime	6	C	37,500	43,800	50,000	56,300	62,500
Major Street	6	C	30,000	35,000	40,000	45,000	50,000
	4	C	22,500	26,300	30,000	33,800	37,500
Class I Collector	4	C	16,500	19,300	22,000	24,800	27,500
URBAN CORE CIRCULATION ELEMENT ROADWAYS							
Gateway Street	6	D	40,800	47,600	54,400	61,200	68,000
	4	D	28,800	33,600	38,400	43,200	48,000
Urban Arterial	4	D	25,200	29,400	33,600	37,800	42,000
Commercial Boulevard	4	D	22,500	26,250	30,000	33,750	37,500
Downtown Promenade	4	D	22,500	26,250	30,000	33,750	37,500
	2	D	9,600	11,200	12,800	14,400	16,000

Note:
Shaded cells correspond to the acceptable traffic volumes for each respective roadway.
(a) The adopted Circulation Element roadways are considered to be Class I Collector Streets and above, and the Urban Core Circulation Element are considered to be 6-lane Gateway Streets and below.

Significance Determination

The significance criteria to evaluate the project impacts to intersections are based on the City of Chula Vista's *Guidelines for Traffic Impact Studies in the City of Chula Vista*, February 13, 2001 and on the City of Chula Vista's adopted General Plan. At intersections, the measurement of effectiveness (MOE) is based on allowable increases in delay. At roadway segments, the MOE is based on allowable increases in the ADT.

Within the City of Chula Vista, the goal is to achieve LOS D or better at all signalized and unsignalized intersections. A project specific impact would occur if the operations at intersections are at LOS E or F *and* the project trips comprise five percent or more of the entering volume. Entering volumes are defined as the number of vehicles "entering" an intersection during a peak-hour. A cumulative impact would occur if the operations at intersections are at LOS E or F only.

For non-Urban Core Circulation Element roadways (Expressway, Prime Arterial, Major Street, Town Center Arterial, Class I Collector), a roadway segment that currently operates at LOS C or better and with the proposed changes would operate at LOS D or worse at General Plan buildout is considered a significant impact. In addition, a roadway segment that currently operates at LOS D or E would operate at LOS E or F at General Plan buildout, respectively, or which operates at LOS D, E, or F and would worsen by five percent or more at General Plan buildout is considered a significant impact.

For Urban Core Circulation Element roadways (Gateway Street, Urban Arterial, Commercial Boulevard, Downtown Promenade), a roadway segment that currently operates at LOS D or better and with the proposed changes would operate at LOS E or F at General Plan buildout is considered a significant impact. In addition, a roadway segment that currently operates at LOS F and would worsen by five percent of more at General Plan buildout is considered a significant impact. **Table 2-4** shows the criteria for determining levels of significance at intersections and roadway segments.

TABLE 2-4
LEVELS OF SIGNIFICANCE CRITERIA FOR INTERSECTIONS AND ROADWAY SEGMENTS

Facility	Measurement of Effectiveness (MOE)	Significance Threshold
Intersection	Seconds of delay	LOS E or F and >5% of entering volume
Roadway Segment	ADT	Non Urban Core Circulation Element Roadways: LOS C or better à LOS D or worse at buildout or LOS D/E à LOS E/F at buildout and >5% of entering volume Urban Core Circulation Element Roadways: LOS D or better à LOS E/F at buildout or LOS E/F and >5% of entering volume

Source: *Guidelines for Traffic Impact Studies in the City of Chula Vista*, February 13, 2001 and City of Chula Vista Adopted General Plan.

3.0 EXISTING CONDITIONS

This section summarizes the existing roadway circulation network, peak-hour and daily traffic volumes, and operations at the study intersections and roadway segments.

Road Network

The following provides a description of the existing street system within the Urban Core study area. It should be noted that the street network is set up in a grid system, with "Streets" typically running east-west and "Avenues" typically running north-south. In addition, each section contains an exhibit of a typical cross section for each respective roadway segment.

E Street is an east-west roadway. E Street is classified as a four-lane gateway street between I-5 and I-805, with the exception of the segment between Broadway and First Avenue, which is classified as a four-lane urban arterial. E Street is four lanes between 3rd Avenue and Broadway, approximately 62 feet in width. Parallel parking is provided on both sides of the street in this section. E Street to the west of Broadway has four lanes, is approximately 70 feet in width, has a two-way left-turn lane, and has no on-street parking. Sidewalks are provided on both sides of the roadway in both sections. The posted speed limit is 30 mph.

F Street is an east-west roadway. F Street is classified as a four-lane downtown promenade between I-5 and Broadway and as a two-lane downtown promenade between Broadway and Third Avenue. F Street is four lanes between Third Avenue and Fourth Avenue with a raised median in the center and is approximately 65 feet in width. The only on-street parking provided in this segment is limited parallel parking on the north side of F Street between Third Avenue and Garret Avenue. Between Fourth Avenue and Broadway, F Street is a two-lane roadway, approximately 40 feet in width with parallel parking on both sides. F Street has four lanes between Broadway and I-5 with parallel parking on both sides and is approximately 66 feet in width. Sidewalks are provided on both sides of the roadway in all three sections. The posted speed limit is 30 mph.

H Street is an east-west roadway with a center two-way left turn lane. H Street is classified as a six-lane gateway street between I-5 and Broadway and between Hilltop Drive and I-805 and as a four-lane urban arterial between Broadway and Hilltop Drive; however, it should be noted that H Street is not built to its ultimate classification and functions as a four-lane roadway between I-5 and Broadway. Parking is provided on-street east of Third Avenue. H Street is approximately 70 feet in curb-to-curb width between Third Avenue and Broadway and 64 feet in curb-to-curb width between Broadway and I-5. Sidewalks are provided on both sides of the street. The posted speed limit is 35 mph.

Broadway is a north-south roadway. Broadway is classified as a four-lane gateway street between SR-54 and C Street and a four-lane commercial boulevard between C Street and L Street. Parallel parking is provided on both sides of the roadway. Between F Street and H Street, there is a two-way left turn lane and the roadway is approximately 82 feet in width. Broadway is approximately 68 feet in width between E Street and F Street. Sidewalks are provided on both sides of the street. The posted speed limit is 35 mph.

3rd Avenue is a north-south roadway. Third Avenue is classified as a four-lane commercial boulevard between C Street and E Street and between H Street and L Street and classified as a two/four-lane downtown promenade between E Street and H Street. Third Avenue is two lanes between E Street and F Street, approximately 72 feet in width. Between F Street and Madrona Street, Third Avenue is a four-lane

roadway with a raised median, approximately 101 feet in width. Between Madrona Street and G Street, Third Avenue is four lanes and approximately 72 feet in width. Angled parking is provided in these first three sections. Third Avenue is a four-lane roadway with a center two-way left-turn lane between G Street and H Street; approximately 66 feet in width and including parallel parking. Sidewalks are provided on both sides of the street in all four sections. The posted speed limit is 35 mph.

Table 3-1 summarizes the existing roadway segment dimensions based on field observations and measurements by Kimley-Horn staff.

Figures 3-1 to **3-1.5** show the existing lane configurations and traffic control at the study intersections and **Figure 3-2** shows the number of lanes and street classification on each evaluated roadway segment within the vicinity of the project site.

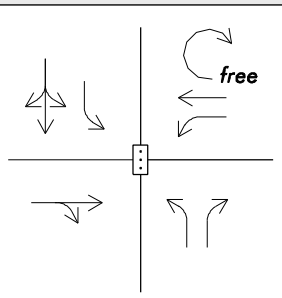
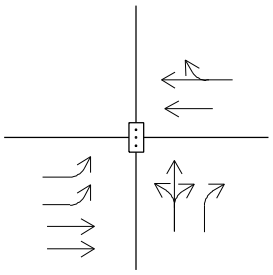
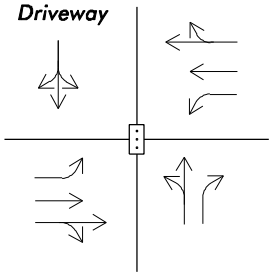
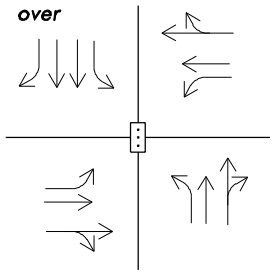
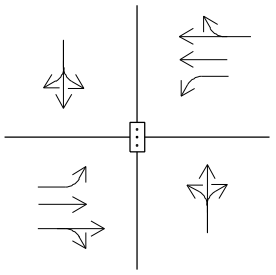
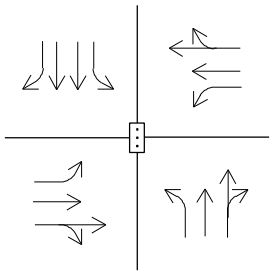
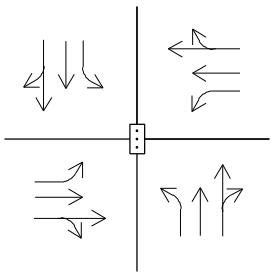
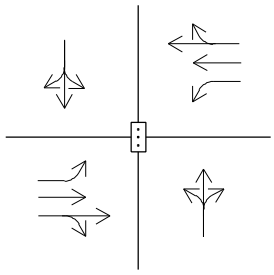
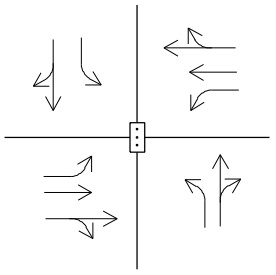
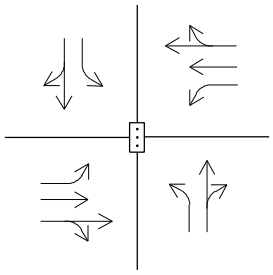
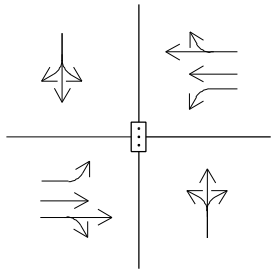
TABLE 3-1
EXISTING ROADWAY SEGMENT DIMENSIONS

Street Segment	Total Travel Lanes	Median/Turn Lane	Curb-to-Curb Width	Parking	Bike Lane
E St between I-5 and Woodlawn Ave	4	Two-Way Left Turn Lane	70’	N	N
E St between Woodlawn Ave and Broadway	4	Two-Way Left Turn Lane	70’	N	N
E St between Broadway and 1st Ave	4	N	62’	Y	N
E St between 1st Ave and I-805	4	Two-Way Left Turn Lane	71’	N	Y
F St between I-5 and Woodlawn Ave	4	N	66’	Y	N
F St between Woodlawn Ave and Broadway	4	N	66’	Y	N
F St between Broadway and 4th Ave	2	N	40’	Y	N
F St between 4th Ave and 3rd Ave	4	Raised Median	65’	N	N
H St between I-5 and Broadway	4	Two-Way Left Turn Lane	64’	N	N
H St between Broadway and 3rd Ave	4	Two-Way Left Turn Lane	64’	N	N
H St between 3rd Ave and Hilltop Dr	4	Two-Way Left Turn Lane	64’	N	Y
H St between Hilltop Dr and I-805	4	N	65’	N	N
J St between Bay Blvd and Broadway	4	Raised Median	67’	N	N
L St between I-5 and Broadway	4	Two-Way Left Turn Lane	63’	N	N
L St between Broadway and Hilltop Dr	4	N	64’	Y	N
Woodlawn Ave between E St and F St	2	N	36’	Y	N
Woodlawn Ave between G St and H St	2	N	33’	Y	N

TABLE 3-1
EXISTING ROADWAY SEGMENT DIMENSIONS (Continued)

Street Segment	Total Travel Lanes	Median/Turn Lane	Curb-to-Curb Width	Parking	Bike Lane
Broadway between SR-54 and C St	4	N	68’	N	N
Broadway between C St and E St	4	Two-Way Left Turn Lane	70’	Y	N
Broadway between E St and F St	4	N	68’	Y	N
Broadway between F St and H St	4	Two-Way Left Turn Lane	82’	Y	N
Broadway between H St and K St	4	Two-Way Left Turn Lane	80’	Y	N
Broadway between K St and L St	4	Two-Way Left Turn Lane	80’	Y	N
Broadway south of L St	4	Raised Median	82’	Y	N
4th Ave between SR-54 and C St	4	Raised Median Extended NB/SB RT Lanes	90’	N	N
4th Ave between C St and E St	4	N	64’	Y	N
4th Ave between E St and H St	4	Two-Way Left Turn Lane	64’	N	N
4th Ave between H St and L St	4	N	63’	Y	N
3rd Ave between C St and E St	4	N	64’	Y	N
3rd Ave between E St and F St	2	N	62’	Y	N
3rd Ave between F St and Madrona St	4	Raised Median	101’	Y	N
3rd Ave between Madrona St and G St	4	N	72’	Y	N
3rd Ave between G St and H St	4	Two-Way Left Turn Lane	66’	Y	N
3rd Ave between H St and L St	4	Two-Way Left Turn Lane	63’	N	N
3rd Ave south of L St	4	Two-Way Left Turn Lane	61’	N	N

E STREET CORRIDOR

1. E St/Bay Blvd -I-5 SB Ramps	2. E St/I-5 NB Ramps	3. E St/Woodlawn Ave	4. E St/Broadway
			
5. E St/5th Ave	**6. E St/4th Ave**	**7. E St/3rd Ave**	**8. E St/2nd Ave**
			
9. E St/1st Ave	**10. E St/Flower St**	**11.Bonita Glen Dr/Bonita Rd**	
			

Legend:

Traffic Signal

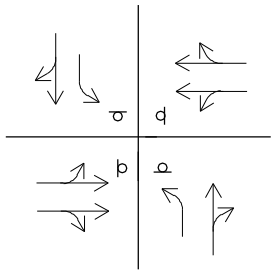
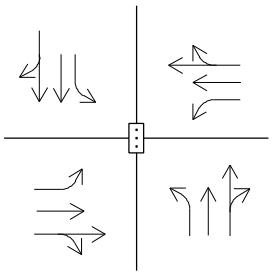
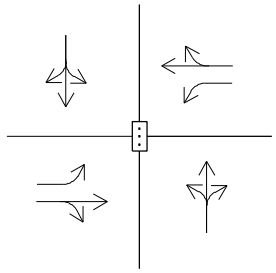
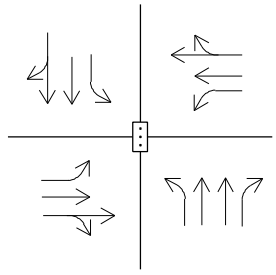
over *Overlap Phase*

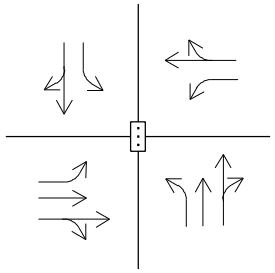
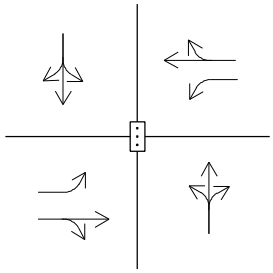
Figure 3-1

KIMLEY-HORN and ASSOCIATES

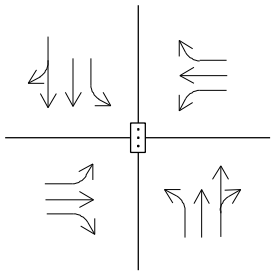
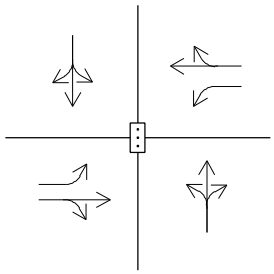
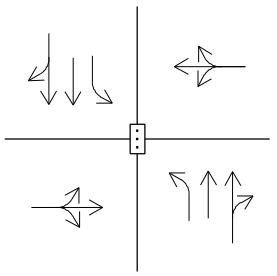
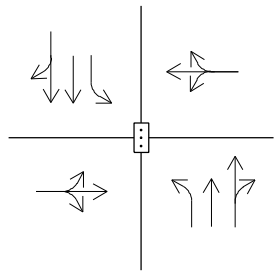
Existing Intersection Geometrics

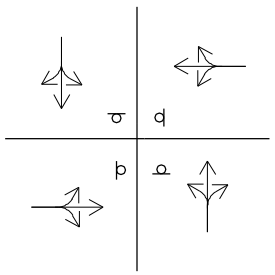
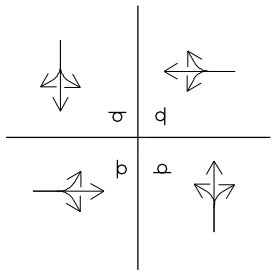
F STREET CORRIDOR

12. F St/Bay Blvd	13. F St/Broadway	14. F St/5th St	15. F St/4th Ave
			

16. F St/3rd Ave	17. F St/2nd Ave
	

G STREET CORRIDOR

18. G St/Broadway	19. G St/5th Ave	20. G St/4th Ave	21. G St/3rd Ave
			

22. G St/2nd Ave	23. G St-Peppertree/Hilltop Dr
	

Legend:

Traffic Signal

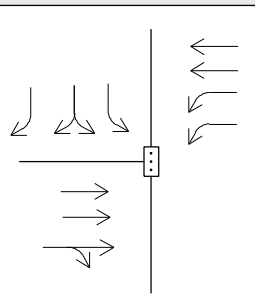
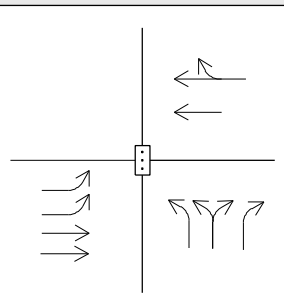
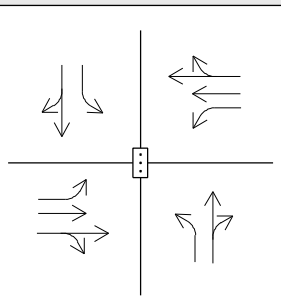
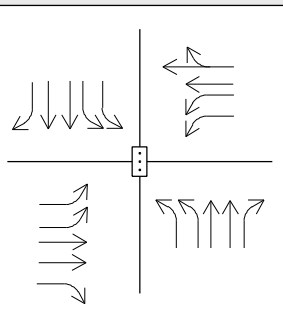
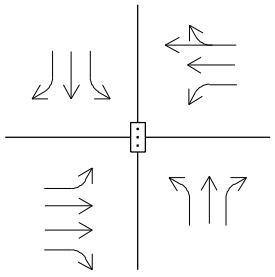
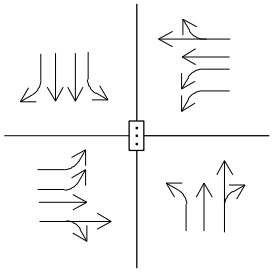
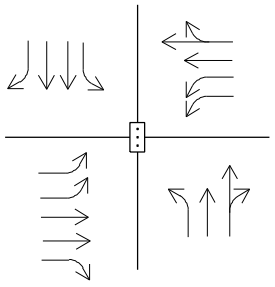
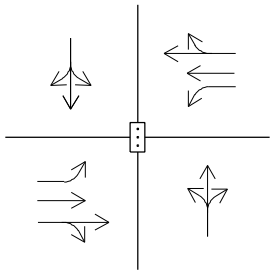
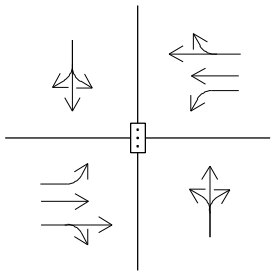
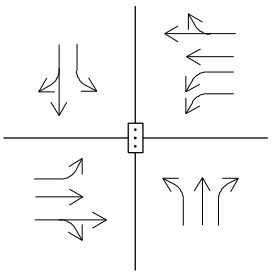
Stop Sign

Figure 3-1.1

KIMLEY-HORN and ASSOCIATES

Existing Intersection Geometrics

H STREET CORRIDOR

24. H St/I-5 SB Ramps	25. H St/I-5 NB Ramp	26. H St/Woodlawn Ave	27. H St/Broadway
			
28. H St/5th Ave	**29. H St/4th Ave**	**30. H St/3rd Ave**	**31. H St/2nd Ave**
			
32. H St/1st Ave	**33. H St/Hilltop Dr**		
			

Legend:

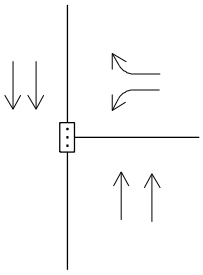
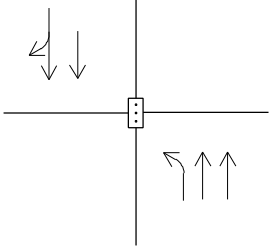
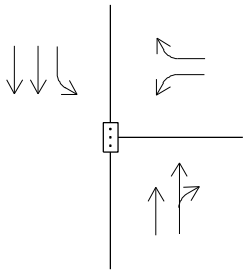
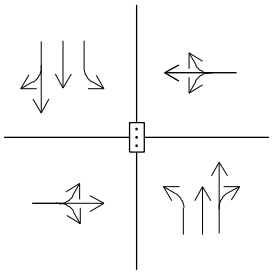
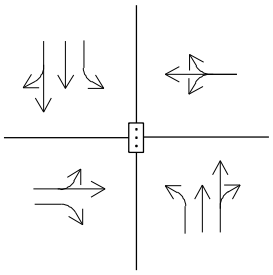
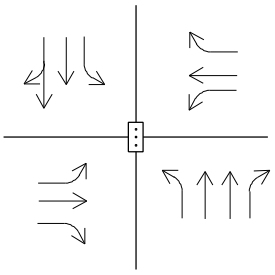
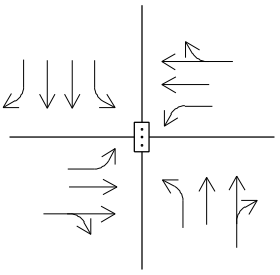
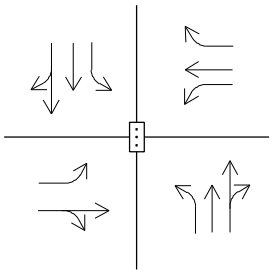
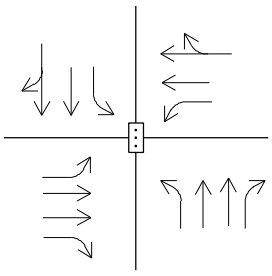
Traffic Signal

Figure 3-1.2

Existing Intersection Geometrics

KIMLEY-HORN and ASSOCIATES

BROADWAY CORRIDOR

34. Broadway/ SR-54 WB Off-Ramp	35. Broadway/ SR-54 EB On-Ramp	36. Broadway/C St	37. Broadway/D St
			
38. Broadway/Flower St	**39. Broadway/I St**	**40. Broadway/J St**	**41. Broadway/K St**
			
42. Broadway/L St			
			

Legend:

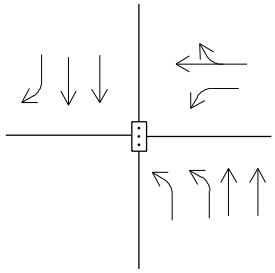
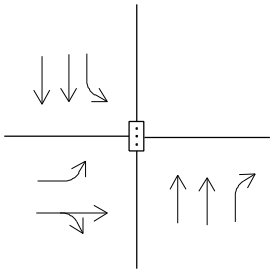
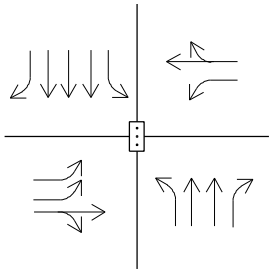
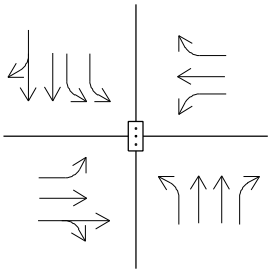
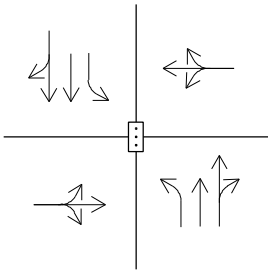
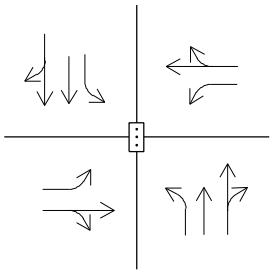
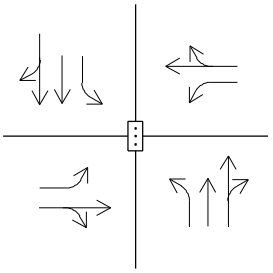
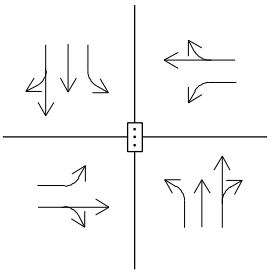
Traffic Signal

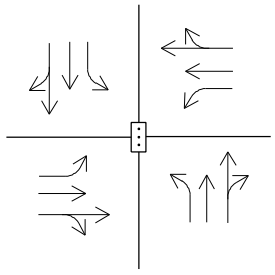
Figure 3-1.3

KIMLEY-HORN and ASSOCIATES

Existing Intersection Geometrics

4TH AVENUE CORRIDOR

43. 4th Ave/SR-54 WB Ramp	44. 4th Ave/SR-54 EB Ramp	45. 4th Ave/Brisbane St	46. 4th Ave/C St
			
47. 4th Ave/D St	**48. 4th Ave/I St**	**49. 4th Ave/J St**	**50. 4th Ave/K St**
			

51. 4th Ave/L St


Legend:

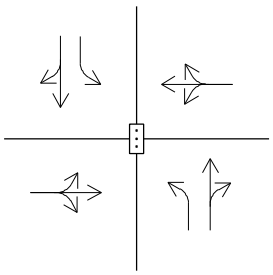
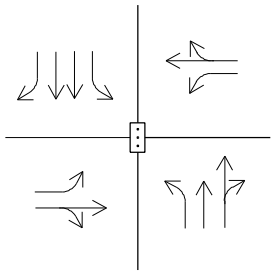
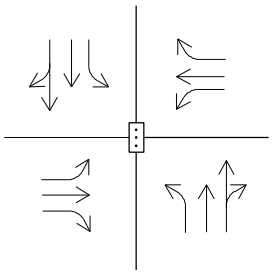
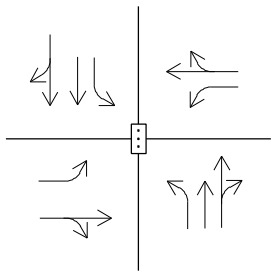
Traffic Signal

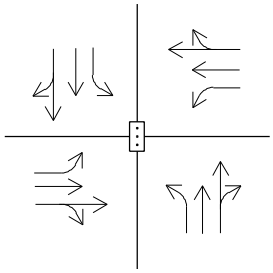
Figure 3-1.4

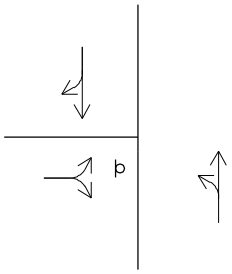
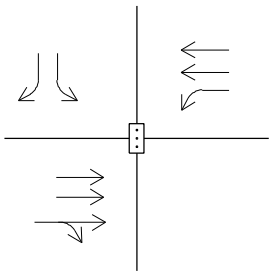
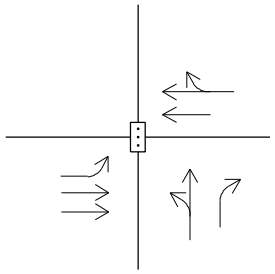
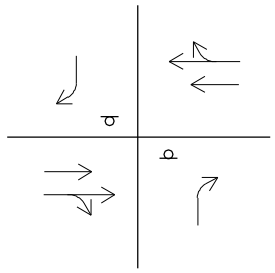
Existing Intersection Geometrics

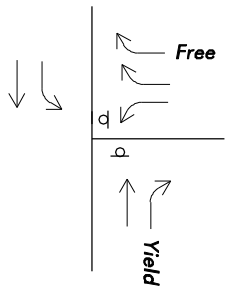
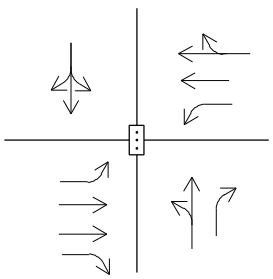
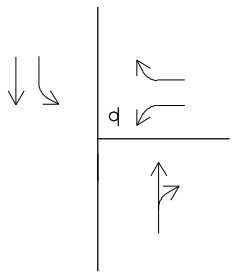
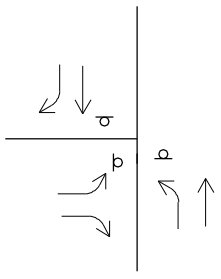
KIMLEY-HORN and ASSOCIATES

3RD AVENUE CORRIDOR

52. 3rd Ave/Davidson Dr	53. 3rd Ave/I St	54. 3rd Ave/J St	55. 3rd Ave/K St
			

56. 3rd Ave/L St


57. 2nd Ave/D St	58. I-5 SB Ramps/J St	59. I-5 NB Ramps/J St	60. Woodlawn/J St
			

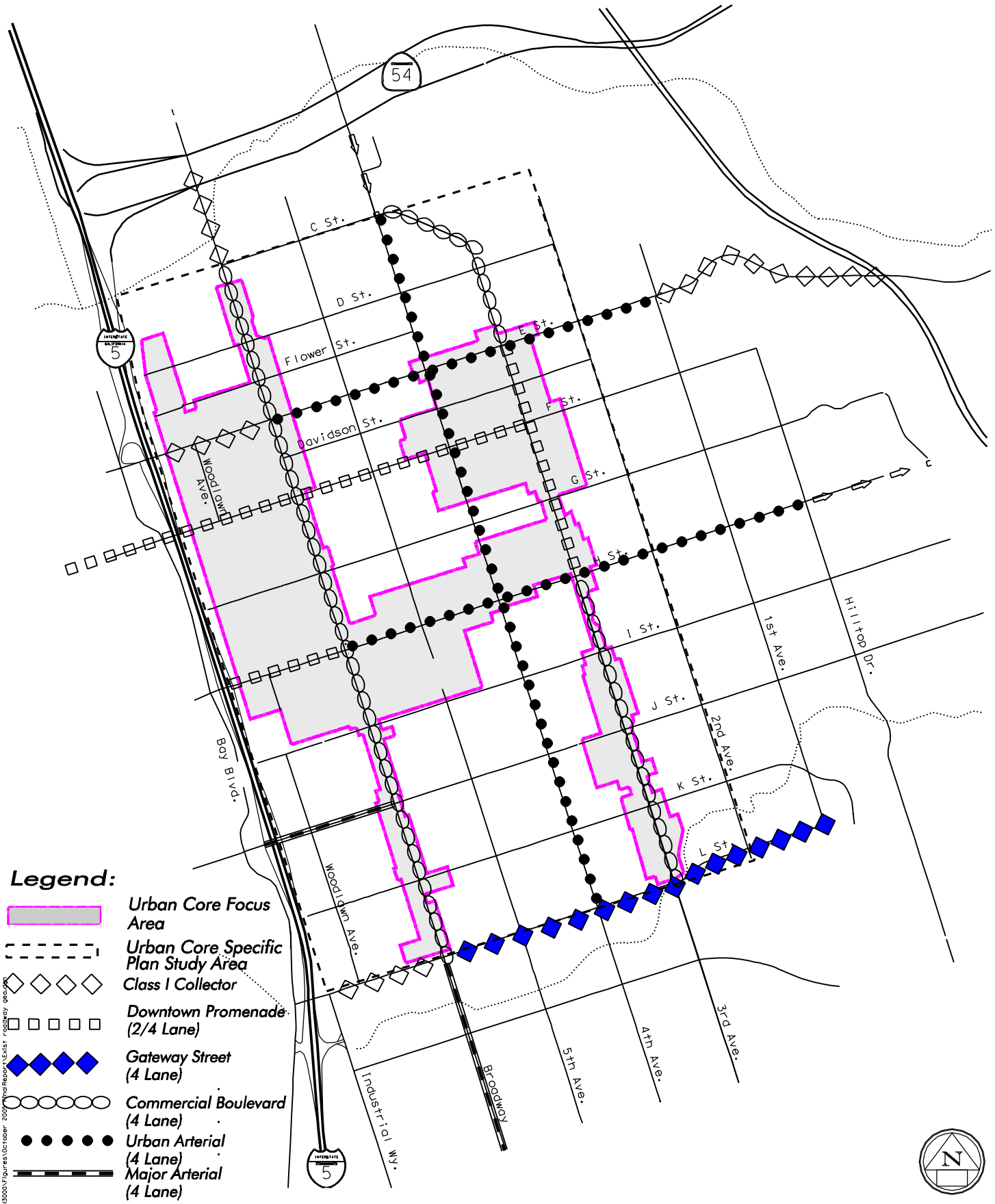
61. Bay Blvd/L St	62. Industrial Blvd/L St	63. Bay Blvd/I-5 SB Ramps	64. Industrial Blvd/I-5 NB Ramps
* 			

* *Intersection analyzed with NB/SB free-flow movement and WB being stop-controlled.*

Legend:

Traffic Signal

Stop Sign



K:\09541\3000\Figures\October 2007\MndRepor\Exist roadway geo.dgn
PLOTTED : 10/7/2005

KIMLEY-HORN and ASSOCIATES

Figure 3-2

Existing Roadway Geometrics

Traffic Volumes

Existing a.m. (7:00 a.m. to 9:00 a.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak-hour turning movement counts were conducted by Southland Car Counters, Turning Point Traffic Service, and Traffic Data Service Southwest at the study intersections. These counts were taken during several different time periods in 2004/2005 and are summarized in **Table 3-2**. The existing ADT for the roadway segments were obtained from the City of Chula Vista. Dates of these counts ranged between 1995 and 2003 and are summarized in **Table 3-3**.

TABLE 3-2
INTERSECTION SEGMENT COUNT DATA SOURCE

	INTERSECTION	SOURCE	DATE
1	Bay Blvd-I-5 SB Ramp @ E St	TPTS	11/16/04
2	I-5 NB Ramp @ E St	TPTS	11/23/04
3	Woodlawn Ave @ E St	SCC	6/16/04
4	Broadway @ E St	SCC	6/22/04
5	5th Ave @ E St	SCC	6/23/04
6	4th Ave @ E St	SCC	6/22/04
7	3rd Ave @ E St	SCC	6/23/04
8	2nd Ave @ E St	SCC	6/23/04
9	1st Ave @ E St	SCC	6/23/04
10	Flower St @ E St	SCC	6/23/04
11	Bonita Glen Dr @ Bonita Rd	SCC	6/23/04
12	Bay Blvd @ F St	TPTS	11/18/04
13	Broadway @ F St	SCC	6/16/04
14	5th Ave @ F St	SCC	6/24/04
15	4th Ave @ F St	SCC	6/23/04
16	3rd Ave @ F St	SCC	6/16/04
17	2nd Ave @ F St	TDSS	4/20/05
18	Broadway @ G St	SCC	6/22/04
19	5th Ave @ G St	SCC	6/16/04
20	4th Ave @ G St	SCC	6/16/04
21	3rd Ave @ G St	SCC	6/22/04
22	2nd Ave @ G St	TDSS	4/20/05
23	Hilltop Dr @ G St	TDSS	4/20/05
24	I-5 SB Ramp @ H St	TPTS	11/18/04
25	I-5 NB Ramp @ H St	SCC	11/14/04
26	Woodlawn Ave @ H St	SCC	1/19/04
27	Broadway @ H St	SCC	1/15/04
28	5th Ave @ H St	SCC	1/15/04
29	4th Ave @ H St	SCC	1/14/04
30	3rd Ave @ H St	SCC	1/14/04
31	2nd Ave @ H St	SCC	1/14/04
32	1st Ave @ H St	SCC	1/15/04

Notes:
SCC = Southland Car Counters; TPTS = Turning Point Traffic Services, TDSS = Traffic Data Service Southwest

TABLE 3-2
INTERSECTION SEGMENT COUNT DATA SOURCE (Continued)

	INTERSECTION	SOURCE	DATE
33	Hilltop Dr @ H St	SCC	1/15/04
34	Broadway @ SR-54 WB Ramp	TDSS	4/20/05
35	Broadway @ SR-54 EB Ramp	TDSS	4/20/05
36	Broadway @ C St	SCC	6/16/04
37	Broadway @ D Street	SCC	6/16/04
38	Broadway @ Flower St	SCC	6/16/04
39	Broadway @ I St	TDSS	4/20/05
40	Broadway @ J St	TDSS	3/30/05
41	Broadway @ K St	TDSS	4/20/05
42	Broadway @ L St	TDSS	4/20/05
43	4th Ave @ SR-54 WB Ramp	TDSS	4/20/05
44	4th Ave @ SR-54 EB Ramp	TDSS	4/20/05
45	4th Ave @ Brisbane St	SCC	6/16/04
46	4th Ave @ C St	SCC	6/16/04
47	4th Ave @ D St	SCC	6/16/04
48	4th Ave @ I St	SCC	6/23/04
49	4th Ave @ J St	SCC	6/16/04
50	4th Ave @ K St	SCC	6/16/04
51	4th Ave @ L St	SCC	6/16/04
52	3rd Ave @ Davidson St	SCC	6/23/04
53	3rd Ave @ I St	SCC	6/23/04
54	3rd Ave @ J St	SCC	6/16/04
55	3rd Ave @ K St	SCC	6/16/04
56	3rd Ave @ L St	SCC	6/16/04
57	2nd Ave @ D St	TDSS	5/3/05
58	J St @ I-5 SB Ramp	TPTS	11/16/04
59	J St @ I-5 NB Ramp	TPTS	11/16/04
60	Woodlawn Ave @ J St	TDSS	4/20/05
61	L St @ Bay Blvd	TPTS	11/17/04
62	L St @ Industrial Blvd	TPTS	11/17/04
63	Bay Blvd @ I-5 SB Ramp	TPTS	11/17/04
64	Industrial Blvd @ I-5 NB Ramp	TPTS	11/17/04

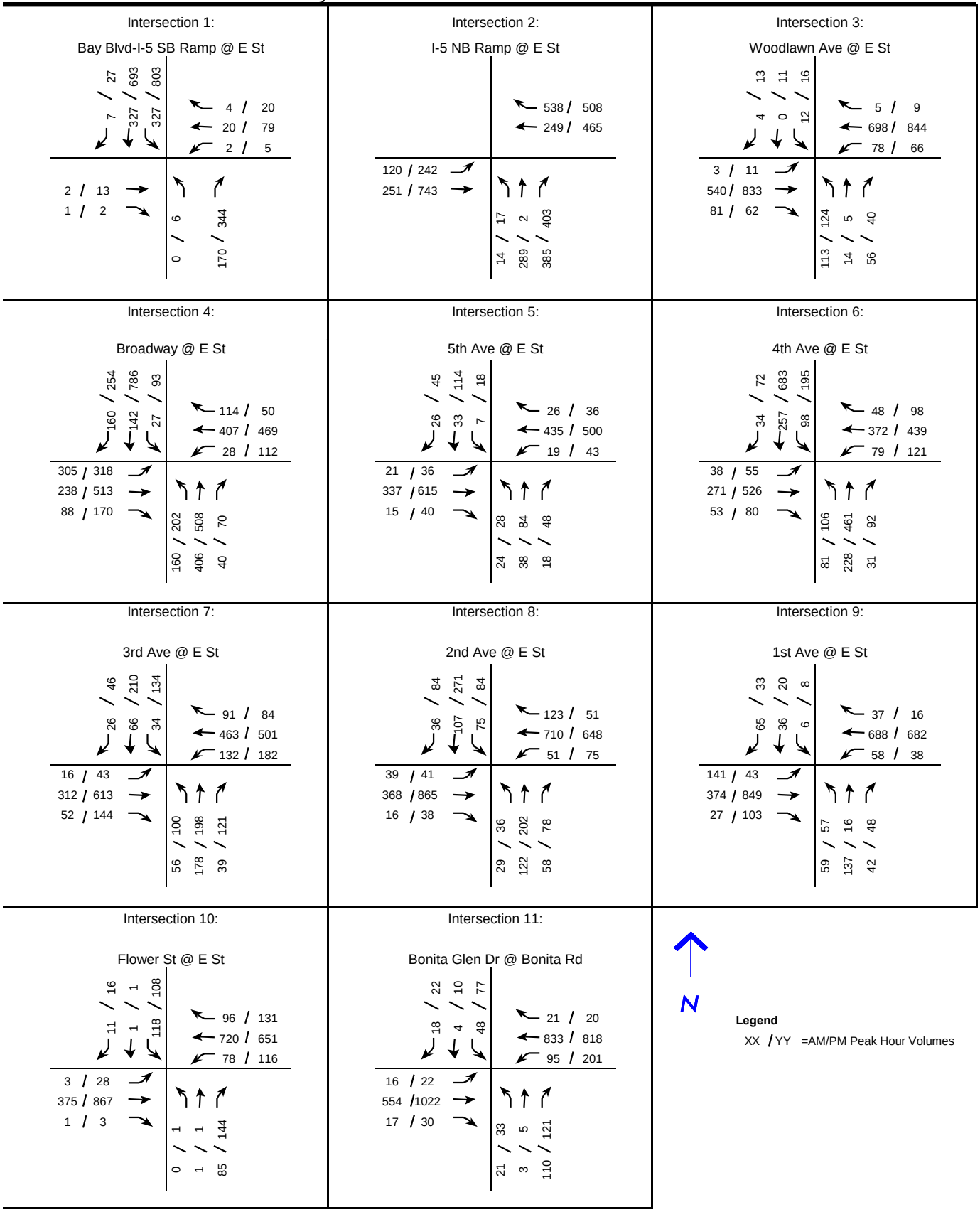
Notes:
SCC = Southland Car Counters; TPTS = Turning Point Traffic Services, TDSS = Traffic Data Service Southwest

TABLE 3-3
ROADWAY SEGMENT COUNT DATA SOURCE

STREET	SEGMENT	COUNT SOURCE	COUNT DATE
E Street	I-5 - Woodlawn Avenue	City of Chula Vista	2003
	Woodlawn Avenue - Broadway	City of Chula Vista	2003
	Broadway - First Avenue	City of Chula Vista	2002/2003
F Street	Bay Boulevard - Broadway	City of Chula Vista	2000
	Broadway - 3rd Avenue	City of Chula Vista	1996/2000/2001
H Street	I-5 - Broadway	City of Chula Vista	2002
	Broadway - Hilltop Drive	City of Chula Vista	2002/2003
J Street	Bay Boulevard - Broadway	City of Chula Vista	2002/2003
L Street	I-5 - Broadway	City of Chula Vista	2002/2003
Woodlawn Avenue	E Street – F Street	City of Chula Vista	2002/2003
	G Street – H Street	City of Chula Vista	2002/2003
Broadway	C Street - E Street	City of Chula Vista	1997
	E Street - H Street	City of Chula Vista	1996/1997/2003
	H Street - L Street	City of Chula Vista	1997/2003
4th Avenue	C Street - E Street	City of Chula Vista	2000
	E Street - H Street	City of Chula Vista	1996/2002
	H Street - L Street	City of Chula Vista	1995/1996/2000/2003
3rd Avenue	C Street - E Street	City of Chula Vista	1995/1996
	E Street - H Street	City of Chula Vista	2002
	H Street - L Street	City of Chula Vista	2002/2003

Figures 3-3 to **3-3.5** illustrate the existing peak-hour traffic volumes at the study intersections and **Figure 3-4** illustrates the existing ADT volumes along the roadway segments.

Appendix B contains the existing peak-hour traffic volume data at the study intersections and the existing ADT volume data for the roadway segments.


Intersection 1:
Bay Blvd-I-5 SB Ramp @ E St
27 / 693 / 803
7 / 327 / 327
4 / 20
20 / 79
2 / 5
2 / 13
1 / 2
0 / 6 / 344
170
Intersection 2:
I-5 NB Ramp @ E St
538 / 508
249 / 465
120 / 242
251 / 743
14 / 17 / 2 / 403
289 / 385
Intersection 3:
Woodlawn Ave @ E St
13 / 11 / 16
4 / 0 / 12
5 / 9
698 / 844
78 / 66
3 / 11
540 / 833
81 / 62
113 / 124 / 5 / 40
14 / 56
Intersection 4:
Broadway @ E St
254 / 786 / 93
160 / 142 / 27
114 / 50
407 / 469
28 / 112
305 / 318
238 / 513
88 / 170
160 / 202 / 508 / 70
406 / 40
Intersection 5:
5th Ave @ E St
45 / 114 / 18
26 / 33 / 7
26 / 36
435 / 500
19 / 43
21 / 36
337 / 615
15 / 40
24 / 28 / 84 / 48
38 / 18
Intersection 6:
4th Ave @ E St
72 / 683 / 195
34 / 257 / 98
48 / 98
372 / 439
79 / 121
38 / 55
271 / 526
53 / 80
81 / 106 / 461 / 92
228 / 31
Intersection 7:
3rd Ave @ E St
46 / 210 / 134
26 / 66 / 34
91 / 84
463 / 501
132 / 182
16 / 43
312 / 613
52 / 144
56 / 100 / 198 / 121
178 / 39
Intersection 8:
2nd Ave @ E St
84 / 271 / 84
36 / 107 / 75
123 / 51
710 / 648
51 / 75
39 / 41
368 / 865
16 / 38
29 / 36 / 202 / 78
122 / 58
Intersection 9:
1st Ave @ E St
33 / 20 / 8
65 / 36 / 6
37 / 16
688 / 682
58 / 38
141 / 43
374 / 849
27 / 103
59 / 57 / 16 / 48
137 / 42
Intersection 10:
Flower St @ E St
16 / 1 / 108
11 / 1 / 118
96 / 131
720 / 651
78 / 116
3 / 28
375 / 867
1 / 3
0 / 1 / 1 / 144
1 / 85
Intersection 11:
Bonita Glen Dr @ Bonita Rd
22 / 10 / 77
18 / 4 / 48
21 / 20
833 / 818
95 / 201
16 / 22
554 / 1022
17 / 30
21 / 33 / 5 / 121
3 / 110
N
Legend
XX / YY =AM/PM Peak Hour Volumes

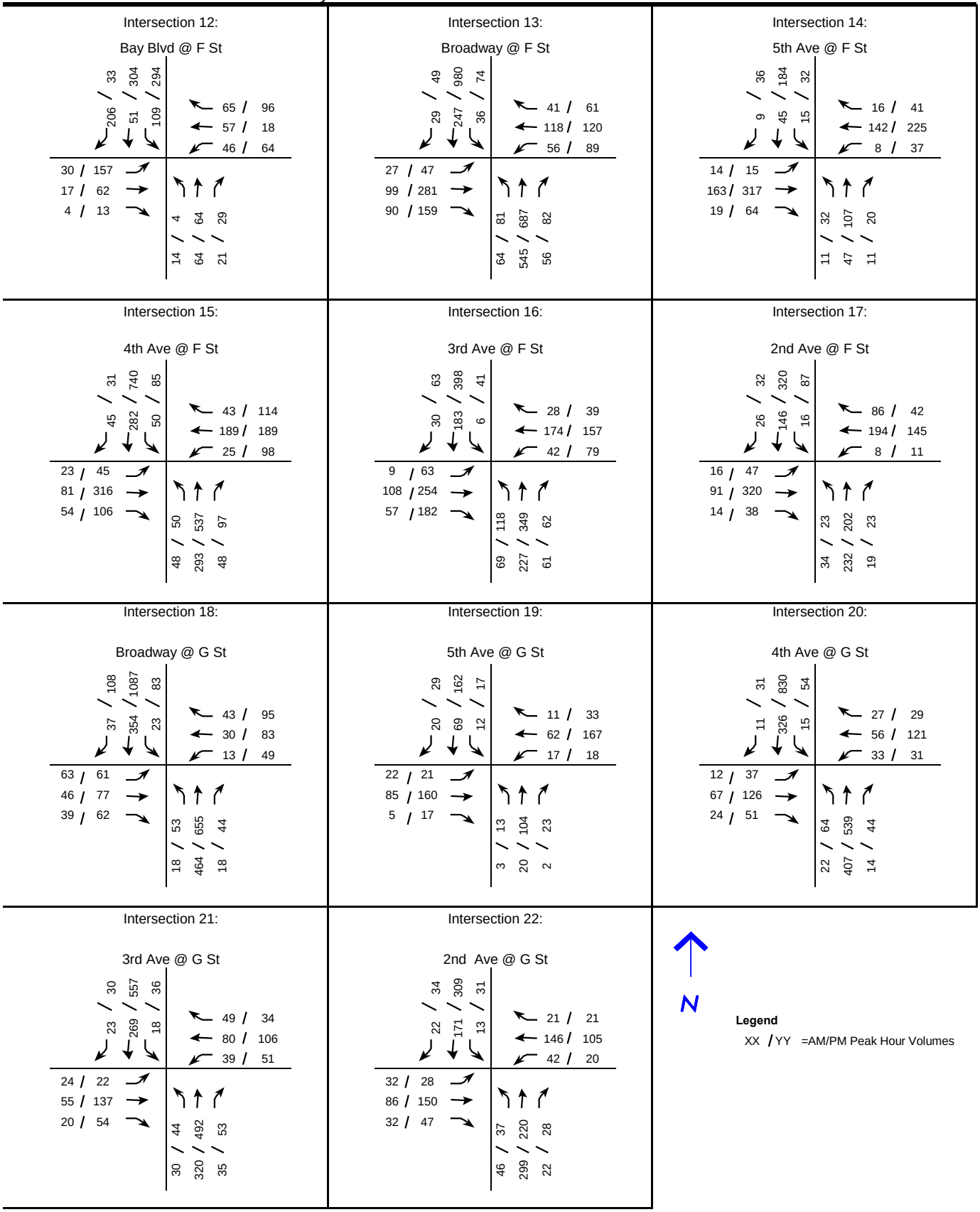
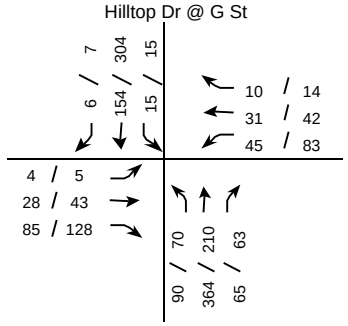


Figure 3-3.1

Existing Peak-Hour Traffic Volumes

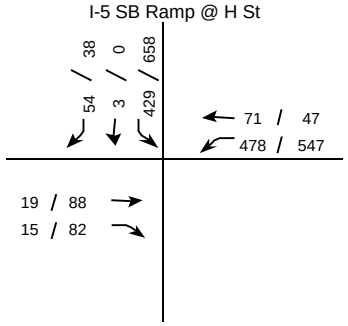
Intersection 23:

Hilltop Dr @ G St



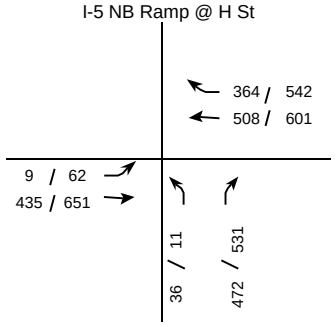
Intersection 24:

I-5 SB Ramp @ H St



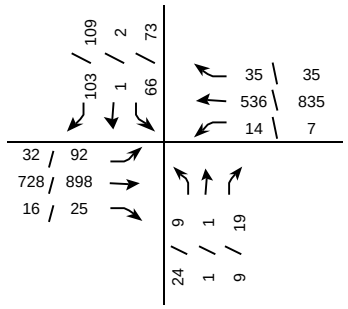
Intersection 25:

I-5 NB Ramp @ H St



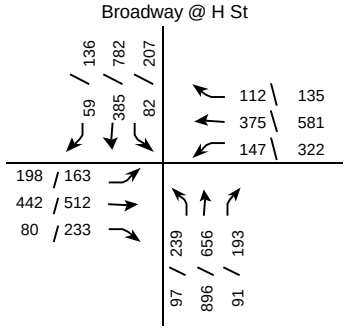
Intersection 26:

Woodlawn Ave @ H St



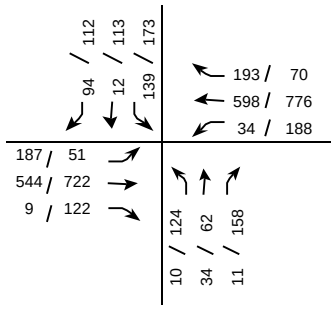
Intersection 27:

Broadway @ H St



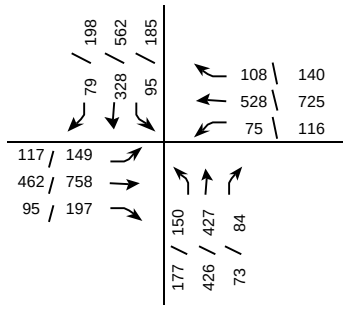
Intersection 28:

5th Ave @ H St



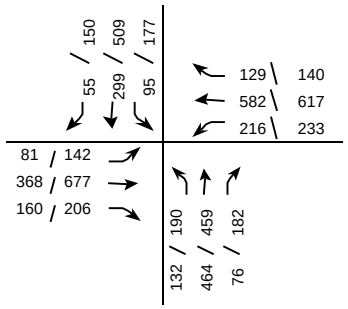
Intersection 29:

4th Ave @ H St



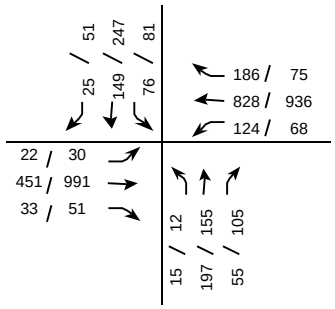
Intersection 30:

3rd Ave @ H St



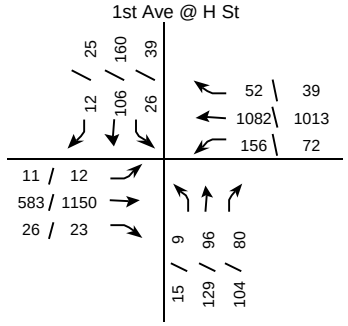
Intersection 31:

2nd Ave @ H St



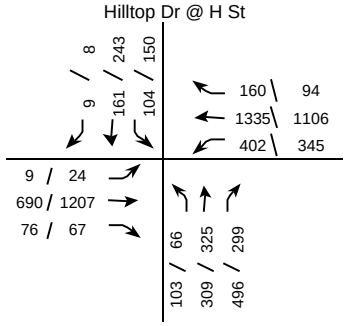
Intersection 32:

1st Ave @ H St



Intersection 33:

Hilltop Dr @ H St



Legend

XX / YY =AM/PM Peak Hour Volumes

Figure 3-3.2

Existing Peak-Hour Traffic Volumes

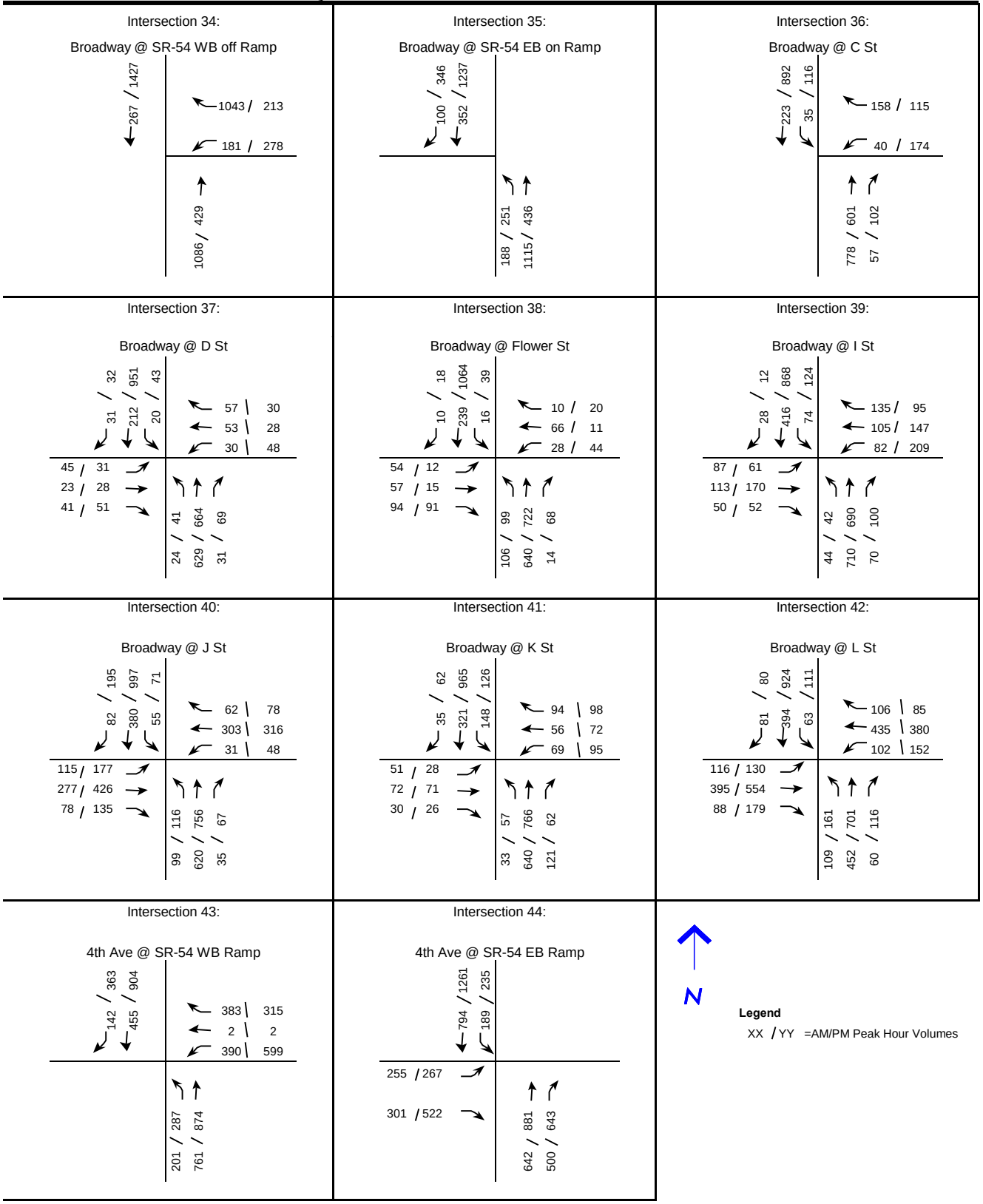


Figure 3-3.3
Existing Peak-Hour Traffic Volumes

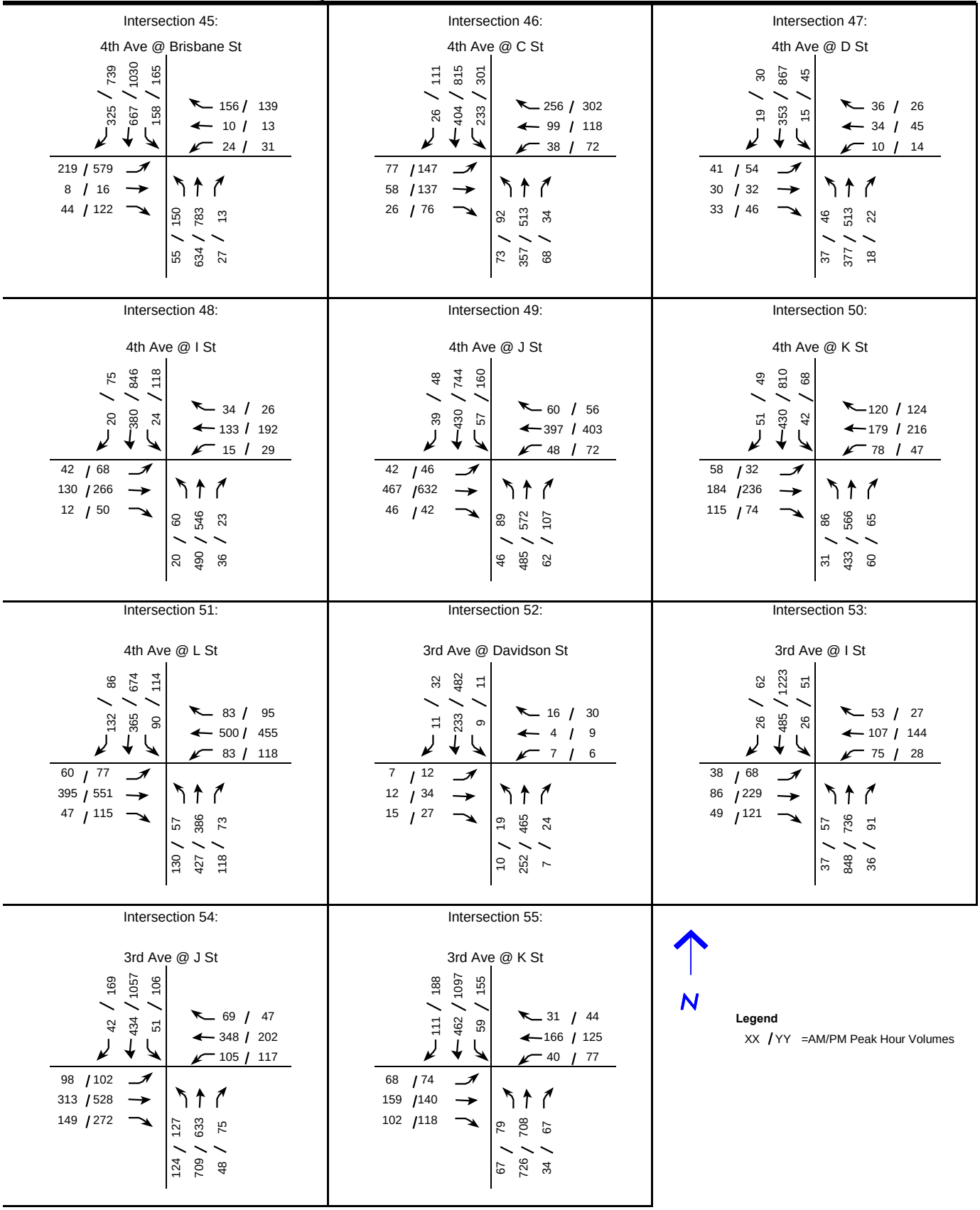
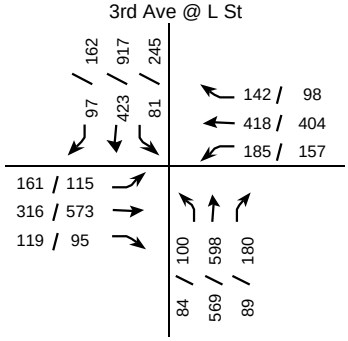


Figure 3-3.4
Existing Peak-Hour Traffic Volumes

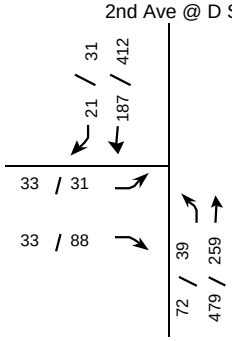
Intersection 56:

3rd Ave @ L St



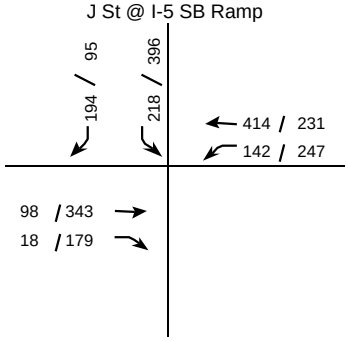
Intersection 57:

2nd Ave @ D St



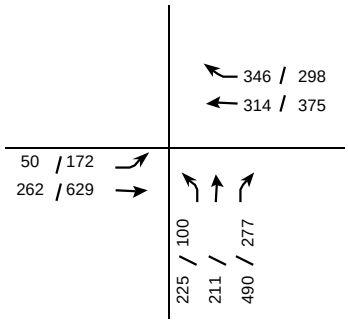
Intersection 58:

J St @ I-5 SB Ramp



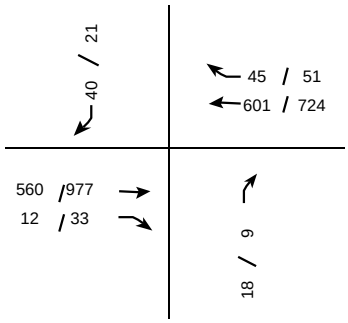
Intersection 59:

J St @ I-5 NB Ramp



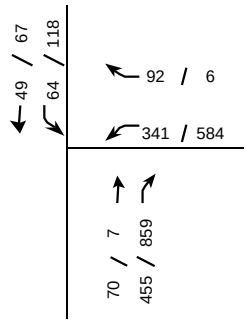
Intersection 60:

Woodlawn Ave @ J St



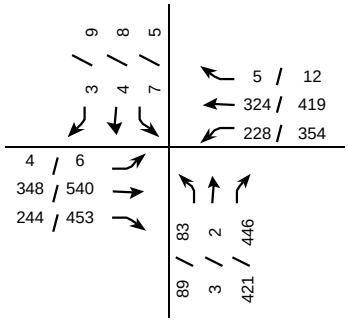
Intersection 61:

L St @ Bay Blvd



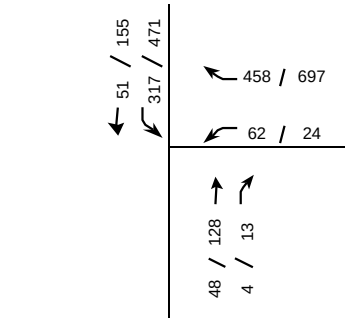
Intersection 62:

L St @ Industrial Blvd



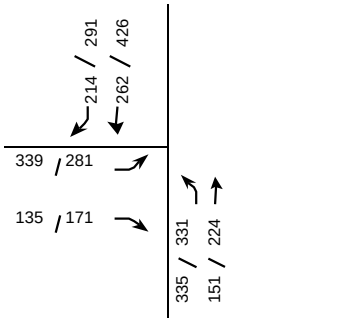
Intersection 63:

Bay Blvd @ I-5 SB Ramp



Intersection 64:

Industrial Blvd @ I-5 NB Ramp



Legend

XX / YY =AM/PM Peak Hour Volumes

Figure 3-3.5

Existing Peak-Hour Traffic Volumes

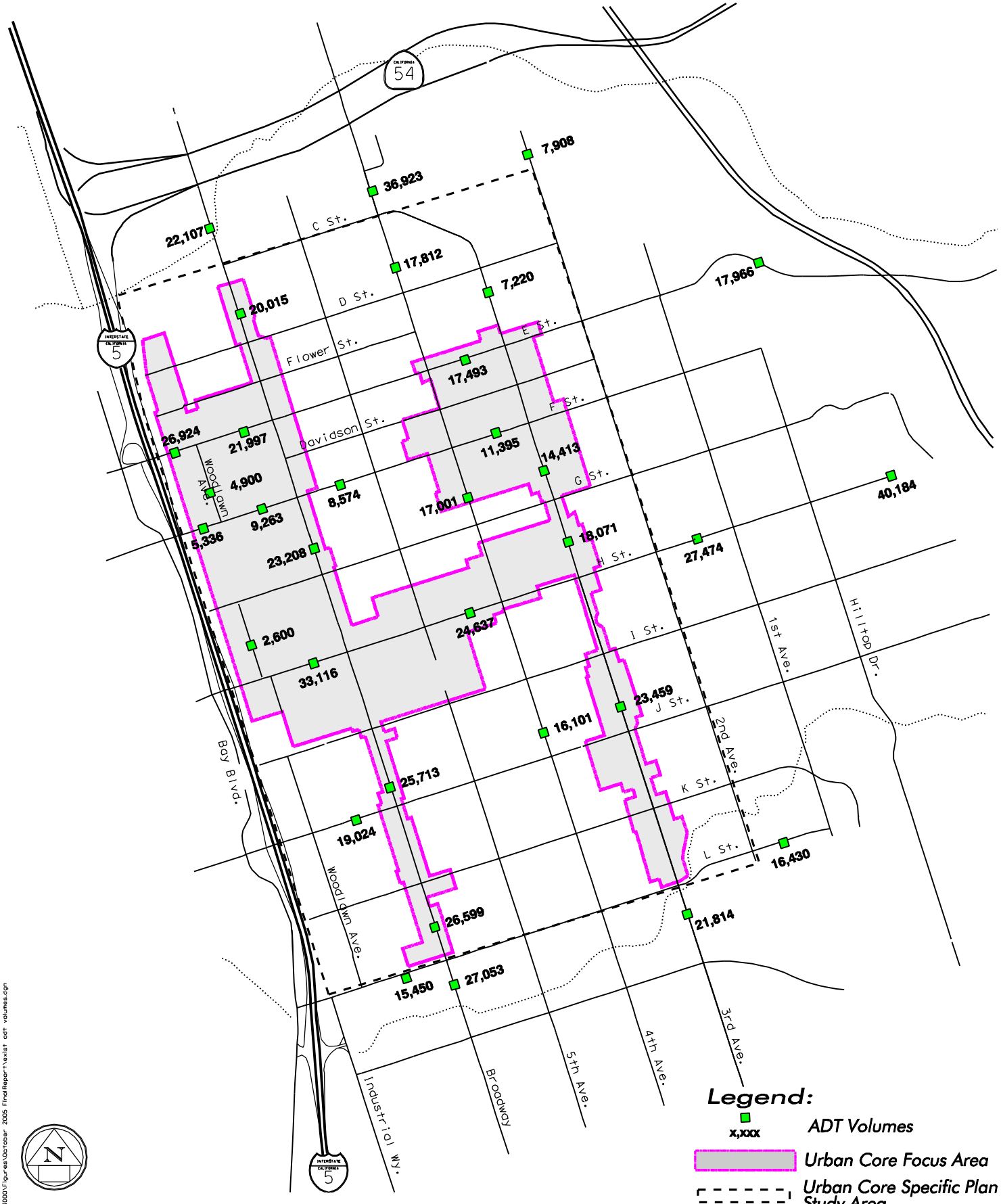


Figure 3-4

Existing ADT Volumes

KIMLEY-HORN and ASSOCIATES

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Intersection Analysis

Table 3-4 displays the LOS analysis results for the study intersections under Existing Conditions. As shown in this table, all study intersections operate at LOS D or better during both peak periods, except for the following intersections:

- #34 Broadway @ SR-54 WB Ramp (LOS F – AM Peak);
- #61 L Street @ Bay Boulevard (LOS F – PM Peak); and
- #63 Bay Boulevard @ I-5 SB Ramp (LOS E – PM Peak).

It should be noted that the E Street and H Street intersections at the I-5 interchange (including Woodlawn Avenue) do not take into account the queues associated with the at-grade trolley crossings at both of these locations. As noted in the methodology section, the E Street and H Street intersections affected by the trolley crossing would experience additional delay along the arterial and at adjacent intersections. Additional delays would be between 17 and 40 seconds per vehicle (depending on the direction and time of day) and drop the LOS by at least one grade.

Appendix C contains the peak-hour intersections LOS calculation worksheets.

Roadway Segment Analysis

Table 3-5 summarizes the existing condition LOS analysis for the roadway segments located in the Urban Core. The existing volume is compared to the acceptable volume as defined in the City of Chula Vista's General Plan. Roadway segments that are part of the Urban Core Circulation Element have an acceptable volume equal to LOS D or better. All other roadway segments within the City have an acceptable volume equal to LOS C or better. As shown in this table, all Urban Core roadways currently function at LOS D or better.

Existing Transit Service

The Urban Core of Chula Vista is currently served by 11 Chula Vista Transit (CVT) routes (Routes 701, 702, 703, 704, 705, 706, 707, 708, 709, 711, and 712), two Metropolitan Transit System (MTS) routes (Routes 929 and 932), and the San Diego Trolley's Blue Line. Several CVT transit routes circulate within the Urban Core and Bayfront area; others serve the greater Chula Vista area and provide connections to National City Transit and other transit providers. MTS route 929 runs along 3rd and 4th Avenues through the Urban Core; MTS transit route 932 runs along Broadway. The San Diego Trolley's Blue Line provides service between Qualcomm Stadium and San Ysidro/Tijuana and extends through the Urban Core parallel to and on the east side of I-5, with stations at Bayfront/E Street and H Street. Service is provided seven days a week with service starting around 5:00 a.m. and ending around 12:00 a.m. During the peak periods, service is provided with 7.5-minute headways and 15 minutes during the off-peak periods.

Figure 3-5 displays the existing transit routes in the Urban Core.

TABLE 3-4

EXISTING CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

	INTERSECTION	PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
1	Bay Blvd-I-5 SB Ramp @ E St	AM	10.1	B
		PM	16.6	B
2	I-5 NB Ramp @ E St	AM	33.2	C
		PM	18.2	B
3	Woodlawn Ave @ E St	AM	21.7	C
		PM	15.5	B
4	Broadway @ E St	AM	16.9	B
		PM	26.3	C
5	5th Ave @ E St	AM	5.0	A
		PM	6.4	A
6	4th Ave @ E St	AM	13.5	B
		PM	18.8	B
7	3rd Ave @ E St	AM	11.9	B
		PM	15.2	B
8	2nd Ave @ E St	AM	7.3	A
		PM	11.0	B
9	1st Ave @ E St	AM	6.8	A
		PM	5.5	A
10	Flower St @ E St	AM	10.6	B
		PM	12.5	B
11	Bonita Glen Dr @ Bonita Rd	AM	12.1	B
		PM	16.5	B
12	Bay Blvd @ F St	AM	8.8	A
		PM	14.7	B
13	Broadway @ F St	AM	16.5	B
		PM	24.1	C
14	5th Ave @ F St	AM	5.7	A
		PM	8.2	A
15	4th Ave @ F St	AM	13.5	B
		PM	17.7	B
16	3rd Ave @ F St	AM	13.9	B
		PM	19.2	B
17	2nd Ave @ F St	AM	9.7	A
		PM	12.5	B
18	Broadway @ G St	AM	12.3	B
		PM	14.9	B
19	5th Ave @ G St	AM	6.3	A
		PM	7.5	A
20	4th Ave @ G St	AM	8.9	A
		PM	10.3	B

Notes:
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 3-4

EXISTING CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
21	3rd Ave @ G St	AM	8.6	A
		PM	9.2	A
22	2nd Ave @ G St	AM	14.1	B
		PM	16.3	C
23	Hilltop Dr @ G St	AM	16.7	C
		PM	14.4	B
24	I-5 SB Ramp @ H St	AM	28.8	C
		PM	21.1	C
25	I-5 NB Ramp @ H St	AM	12.7	B
		PM	14.8	B
26	Woodlawn Ave @ H St	AM	38.0	D
		PM	22.3	C
27	Broadway @ H St	AM	25.7	C
		PM	27.1	C
28	5th Ave @ H St	AM	10.8	B
		PM	11.3	B
29	4th Ave @ H St	AM	22.1	C
		PM	29.2	C
30	3rd Ave @ H St	AM	19.3	B
		PM	23.8	C
31	2nd Ave @ H St	AM	8.4	A
		PM	11.5	B
32	1st Ave @ H St	AM	7.6	A
		PM	8.2	A
33	Hilltop Dr @ H St	AM	32.2	C
		PM	41.3	D
34	Broadway @ SR-54 WB Ramp	AM	82.9	**F**
		PM	11.8	B
35	Broadway @ SR-54 EB Ramp	AM	3.3	A
		PM	6.3	A
36	Broadway @ C St	AM	18.1	B
		PM	15.1	B
37	Broadway @ D Street	AM	9.2	A
		PM	10.2	B
38	Broadway @ Flower St	AM	11.5	B
		PM	14.0	B
39	Broadway @ I St	AM	16.3	B
		PM	17.3	B
40	Broadway @ J St	AM	13.6	B
		PM	18.6	B

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 3-4

EXISTING CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
41	Broadway @ K St	AM	11.7	B
		PM	13.2	B
42	Broadway @ L St	AM	15.5	B
		PM	20.4	C
43	4th Ave @ SR-54 WB Ramp	AM	14.7	B
		PM	25.9	C
44	4th Ave @ SR-54 EB Ramp	AM	13.4	B
		PM	27.2	C
45	4th Ave @ Brisbane St	AM	21.5	C
		PM	27.3	C
46	4th Ave @ C St	AM	23.2	C
		PM	31.4	C
47	4th Ave @ D St	AM	9.1	A
		PM	10.5	B
48	4th Ave @ I St	AM	8.8	A
		PM	10.1	B
49	4th Ave @ J St	AM	9.3	A
		PM	15.7	B
50	4th Ave @ K St	AM	8.5	A
		PM	10.1	B
51	4th Ave @ L St	AM	24.6	C
		PM	26.6	C
52	3rd Ave @ Davidson St	AM	9.9	A
		PM	13.2	B
53	3rd Ave @ I St	AM	10.1	B
		PM	12.2	B
54	3rd Ave @ J St	AM	18.8	B
		PM	35.9	D
55	3rd Ave @ K St	AM	9.5	A
		PM	11.0	B
56	3rd Ave @ L St	AM	18.1	B
		PM	27.0	C
57	2nd Ave @ D St	AM	14.9	B
		PM	14.9	B
58	J St @ I-5 SB Ramp	AM	8.9	A
		PM	15.1	B
59	J St @ I-5 NB Ramp	AM	10.6	B
		PM	8.2	A
60	Woodlawn Ave @ J St	AM	11.0	B
		PM	11.9	B

Notes:
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 3-4

EXISTING CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

INTERSECTION		PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
61	L St @ Bay Blvd	AM	16.8	C
		PM	120.3	**F**
62	L St @ Industrial Blvd	AM	18.9	B
		PM	25.4	C
63	Bay Blvd @ I-5 SB Ramp	AM	22.2	C
		PM	48.6	**E**
64	Industrial Blvd @ I-5 NB Ramp	AM	15.4	C
		PM	17.7	C

Notes:
Bold values indicate intersections operating at LOS E or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 3-5

EXISTING CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE SUMMARY

STREET	SEGMENT	STREET CLASSIFICATION (b)	DAILY TRAFFIC VOLUME	ACCEPTABLE VOLUME	LOS E CAPACITY	VOLUME TO CAPACITY (V/C)	DAILY SEGMENT LOS
E Street	I-5 - Woodlawn Avenue	4 Lanes Gateway Street	26,924	43,200	48,000	0.56 (b)	A
	Woodlawn Avenue - Broadway	4 Lanes Gateway Street	21,997	43,200	48,000	0.46 (b)	A
	Broadway - 1st Avenue	4 Lanes Urban Arterial	17,493	37,800	42,000	0.42 (b)	A
	1st Avenue - I-805	4 Lanes Gateway Street	17,966	43,200	48,000	0.37 (b)	A
F Street	Bay Boulevard - Woodlawn Avenue	4 Lanes Downtown Promenade	5,336	33,750	37,500	0.14 (b)	A
	Woodlawn Avenue - Broadway	4 Lanes Downtown Promenade	9,263	33,750	37,500	0.25 (b)	A
	Broadway - 4th Avenue	2 Lanes Downtown Promenade	8,574	14,400	16,000	0.54 (b)	A
	4th Avenue - 3rd Avenue	4 Lanes Downtown Promenade	11,395	33,750	37,500	0.30 (b)	A
H Street	I-5 - Broadway	4 Lanes Gateway Street (c)	33,116	43,200	48,000	0.69 (b)	B
	Broadway - 3rd Avenue	4 Lanes Urban Arterial	24,637	37,800	42,000	0.59 (b)	A
	3rd Avenue - Hilltop Drive	4 Lanes Urban Arterial	27,474	37,800	42,000	0.65 (b)	A
	Hilltop Drive - I-805	4 Lanes Gateway Street (c)	40,184	43,200	48,000	0.84 (b)	D
J Street	Bay Boulevard - Broadway	4 Lanes Major Street	19,024	40,000	37,500	0.51 (b)	A
L Street	I-5 - Broadway	4 Lanes Gateway Street	15,450	43,200	48,000	0.32 (b)	A
	Broadway - Hilltop Drive	4 Lanes Class I Collector	16,430	22,000	27,500	0.60 (b)	A
Woodlawn Avenue	E Street - F Street	2 Lanes Downtown Promenade	4,900	14,400	16,000	0.31 (b)	A
	G Street - H Street	2 Lanes Downtown Promenade	2,600	14,400	16,000	0.16 (b)	A
Broadway	SR-54 - C Street	4 Lanes Gateway Street	22,107	43,200	48,000	0.46 (b)	A
	C Street - E Street	4 Lanes Commercial Boulevard	20,015	33,750	37,500	0.53 (b)	A
	E Street - H Street	4 Lanes Commercial Boulevard	23,208	33,750	37,500	0.62 (b)	B
	H Street - K Street	4 Lanes Commercial Boulevard	25,713	33,750	37,500	0.69 (b)	B
	K Street - L Street	4 Lanes Commercial Boulevard	26,599	33,750	37,500	0.71 (b)	C
	South of L Street	4 Lanes Major Street	27,053	40,000	37,500	0.72	C
4th Avenue	SR-54 - C Street	4 Lanes Gateway Street (c)	36,923	43,200	48,000	0.77 (b)	C
	C Street - E Street	4 Lanes Urban Arterial	17,812	37,800	42,000	0.42 (b)	A
	E Street - H Street	4 Lanes Urban Arterial	17,001	37,800	42,000	0.40 (b)	A
	H Street - L Street	4 Lanes Urban Arterial	16,101	37,800	42,000	0.38 (b)	A
3rd Avenue	C Street - E Street	4 Lanes Commercial Boulevard	7,220	33,750	37,500	0.19 (b)	A
	E Street - G Street	4 Lanes Downtown Promenade	14,413	33,750	37,500	0.38 (b)	A
	G Street - H Street	4 Lanes Downtown Promenade	18,071	33,750	37,500	0.48 (b)	A
	H Street - L Street	4 Lanes Commercial Boulevard	23,459	33,750	37,500	0.63 (b)	B
	South of L Street	4 Lanes Class I Collector	21,814	22,000	27,500	0.79	C

NOTE: Values in **bold** indicate roadway segments exceeding the City's minimum performance standard.

(a) Street classification is based on the standards provided in the 2005 Chula Vista General Plan, but will be analyzed with existing number of lanes for each respective roadway segment.

(b) This roadway segment is part of the Urban Core Circulation Element.

(c) This roadway segment is classified as a 6-lane roadway, but is assumed to function as a 4-lane roadway for this scenario.

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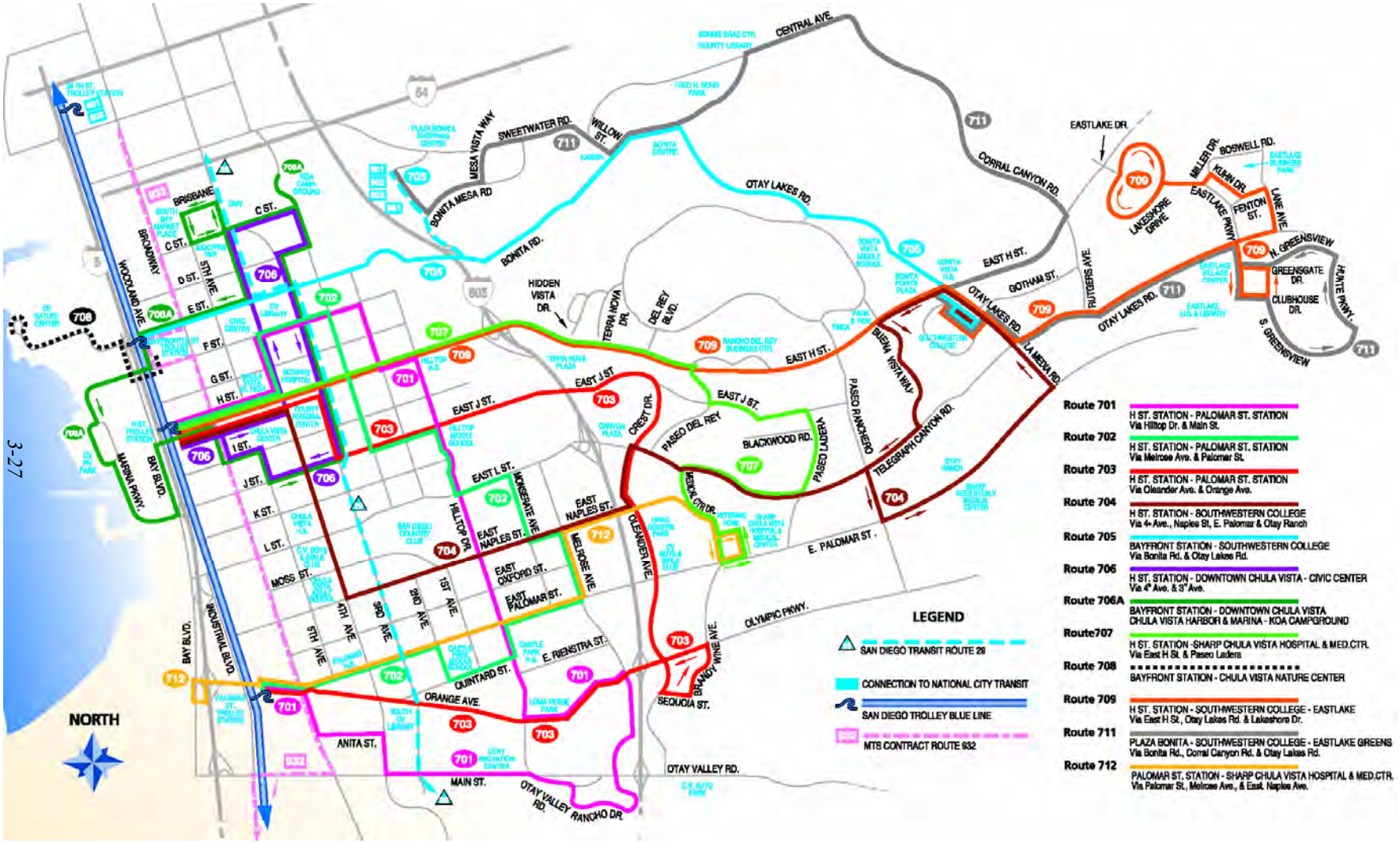

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Figure 3-5
Existing Transit Routes

4.0 URBAN CORE TRAFFIC

The following section describes the City of Chula Vista's Urban Core Specific Plan project including the projected land uses, Urban Core traffic generation, and transportation modeling assumptions.

Land Uses

In order to realize the vision for the urban core established by the updated General Plan, it was recognized that existing zoning for the Urban Core focus area or "subdistricts" needed "re-tooling". The 30+ year-old zoning regulations either precluded or created a cumbersome entitlement process to achieve the variety of living, employment, and service choices envisioned by the General Plan and quite common place in the 21st century. Therefore, the Specific Plan was prepared to provide a set of contemporary implementing tools to allow new development and redevelopment to occur over the next 20 to 25 years. To that end, the Specific Plan anticipates the following projected buildout over the life of the plan consistent with the General Plan, which is summarized in **Table 4-1**.

Figure 4-1 shows the location of the land uses assumed in the Urban Core.

TABLE 4-1
URBAN CORE SPECIFIC PLAN PROJECTED BUILDOUT

Land Use	Existing	Net Increase	Total
Residential	3,700 du	7,100 du	10,800 du
Retail	3,000,000 sf	1,000,000 sf	4,000,000 sf
Office	2,400,000 sf	1,300,000 sf	3,700,000 sf
Visitor Serving Commercial	--	1,300,000 sf	1,300,000 sf

Note:
All totals are approximate and may include a combination of new infill development and existing uses.

Urban Core Traffic Generation

The traffic associated with the Urban Core has been included in the traffic volumes used for the General Plan Update. The traffic forecasts from the General Plan Update were used for the UCSP transportation analysis because the trip generation for the Urban Core is generally consistent with the General Plan land uses associated projected traffic volumes and distribution patterns. Based on the Urban Core land uses shown in Figure 4-1, **Table 4-2** summarizes the trip generation for the Chula Vista Urban Core project. As shown in the table, a total of approximately 331,100 ADT is expected with the full build-out of the Urban Core. This would be an increase of 141,100 ADT over existing conditions. The largest percentage increase in ADT would occur from the residential land use, with an increase of approximately 100 percent.

TABLE 4-2
TRIP GENERATION SUMMARY

Land Use	Existing ADT	Net ADT Increase	Total ADT
Residential	22,200	42,600	64,800
Retail	120,000	40,000	160,000
Office	48,000	26,000	74,000
Visitor Serving Commercial	--	32,500	32,500
TOTALS	**190,200**	**141,100**	**331,100**

Note:
Trip generation values shown above were based rates referenced in the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, SANDAG, April 2002. (6 trips/du for residential, 40 trips/1,000 sf for retail, 20 trips/1,000 sf for office, and 50% hotel/50% retail for visitor serving commercial)

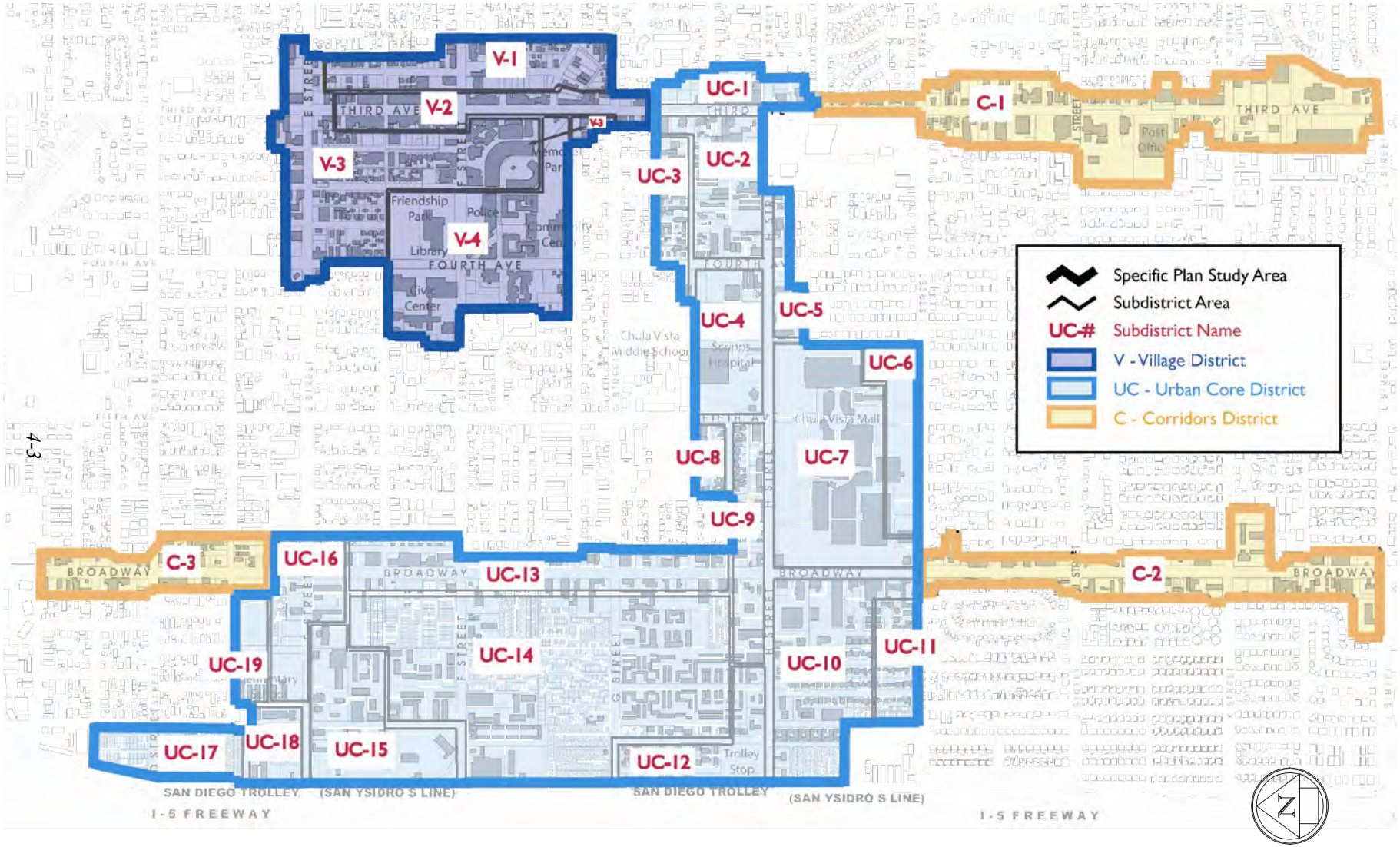

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Figure 4-1
Location of Urban Core Land Uses

Transportation Modeling

Traffic volumes for of the proposed Urban Core Specific Plan were generated using the SANDAG TRANPLAN regional traffic model, which is based on Series 10 employment and population projections for the San Diego region. This computerized model takes land use and transportation network information as inputs and estimates the volumes of traffic on existing and future roadways under long-term future conditions using the four-step Urban Transportation Planning Process:

1) Trip generation;

2) Mode split;

3) Trip distribution; and

4) Traffic assignment.

Regional transportation infrastructure was modeled using SANDAG's "reasonably expected" Mobility 2030 assumptions and General Plan land use assumptions. The following list summarizes the land use and network assumptions evaluated in this study:

Land Use Assumptions

- Full build-out of planned future land uses in the City of Chula Vista
- 2030 Population and Employment in the region
- See General Plan for other/all considerations

Network Assumptions

- Woodlawn Avenue would not be connected between F Street and G Street. H Street between Broadway and Hilltop Drive would be reclassified from a six-lane major to four-lane major (Circulation element changes within Urban Core. For other changes in Chula Vista, refer to Figure 1.2-1 of the City of Chula Vista General Plan shown in **Appendix D**.)
- SR-125 is a four-lane toll road
- See General Plan for other/all considerations

Transit Assumptions

- Regional Transit Vision (RTV) described in the Regional Transportation Plan (RTP) emphasizes integration of transit service within communities and neighborhoods, makes use of high-occupancy vehicle (HOV) lanes and/or managed lanes, incorporates signal priority or transit-only lanes on arterials, increasing transit competitiveness with automobile trips, and improved transit customer service.

- Regional Comprehensive Plan (RCP) incorporates smart growth, which involves identifying appropriate land patterns and a complementary multi-modal transportation system so as to improve the viability of public transit and other travel modes for the whole range of trip types, including commuting, shopping, school, etc.
- A Yellow Car Bus Rapid Transit (BRT) route would be provided along I-5, additional Blue Line Light Rail Transit (LRT) service would be provided along the existing trolley tracks, and a BRT route would be provided along H Street connecting the west and east ends of Chula Vista (For other routes outside of the Urban Core, refer to Figure 1.2-3 of the City of Chula Vista General Plan shown in **Appendix D**.)

5.0 YEAR 2030 CONDITIONS

This section provides a description of the year 2030 traffic conditions with the full build-out of the City of Chula Vista's Urban Core Specific Plan project land uses.

Road Network

It was assumed that roads within the Urban Core would be reclassified, but not yet built to their ultimate classification. As a result, no changes would be made to the roadway network compared to Existing Conditions. See previously shown Figures 3-1 to 3-1.5 and 3-2 for the traffic control and lane configurations at the study intersections and the number of lanes and street classifications on each roadway segment in 2030, respectively.

Traffic Volumes

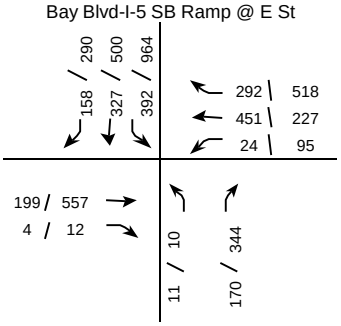
Year 2030 traffic volumes at study intersections were calculated by applying growth factors to existing traffic volumes. These growth factors were determined by comparing the Year 2030 ADT by the existing ADT for each respective roadway segment. This growth in traffic varied between a minimum of 10 percent to a more than doubling of traffic on some intersection approaches. In cases where extreme traffic growth was projected, adjustments were made to account for spreading of the peak hour. This spreading presumes that the peak hour may last for more than one hour in the morning or afternoon peak hour.

The Year 2030 Conditions ADT volumes along the roadway segments were obtained from SANDAG. This forecast model was based on Series 10 and included the Regional Transit Vision (RTV) assumption.

Figures 5-1 to **5-1.5** illustrate the Year 2030 Conditions peak-hour traffic volumes at the study intersections and **Figure 5-2** illustrates the Year 2030 Conditions ADT volumes along the roadway segments.

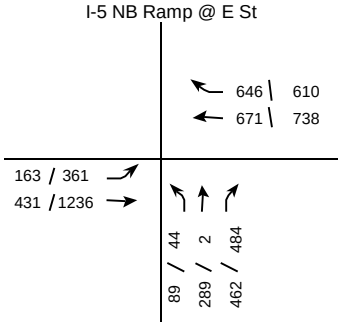
Intersection 1:

Bay Blvd-I-5 SB Ramp @ E St



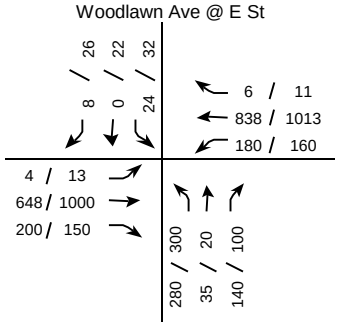
Intersection 2:

I-5 NB Ramp @ E St



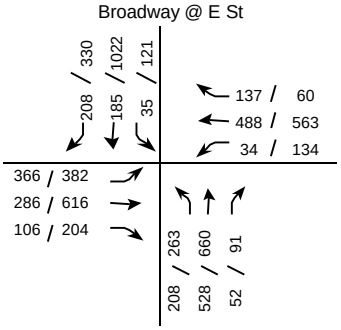
Intersection 3:

Woodlawn Ave @ E St



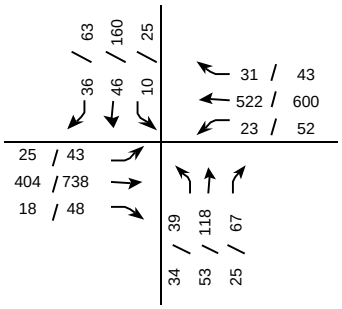
Intersection 4:

Broadway @ E St



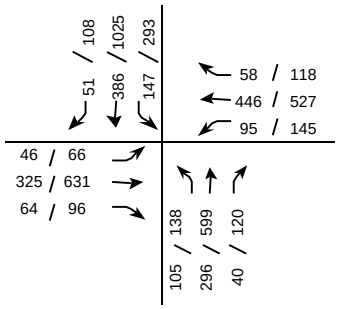
Intersection 5:

5th Ave @ E St



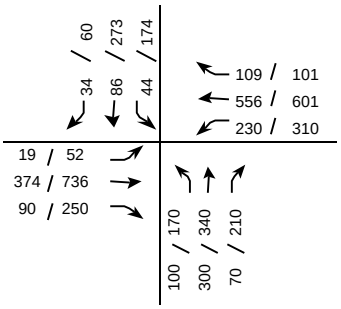
Intersection 6:

4th Ave @ E St



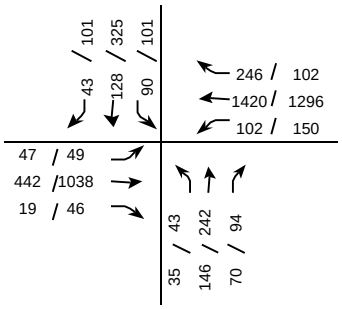
Intersection 7:

3rd Ave @ E St



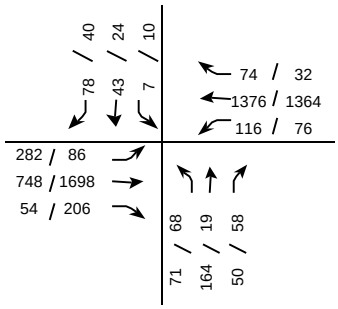
Intersection 8:

2nd Ave @ E St



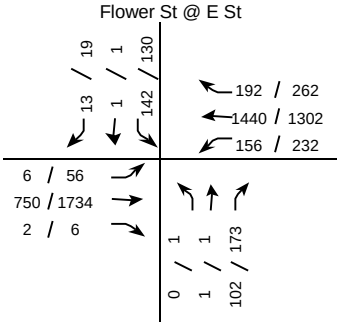
Intersection 9:

1st Ave @ E St



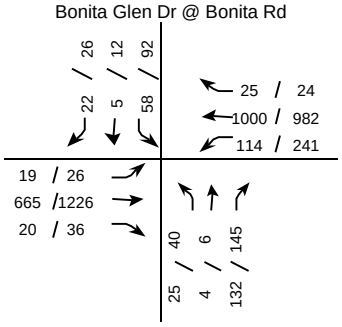
Intersection 10:

Flower St @ E St



Intersection 11:

Bonita Glen Dr @ Bonita Rd



Legend

XX / YY =AM/PM Peak Hour Volumes

Figure 5-1

Year 2030 Peak-Hour Traffic Volumes

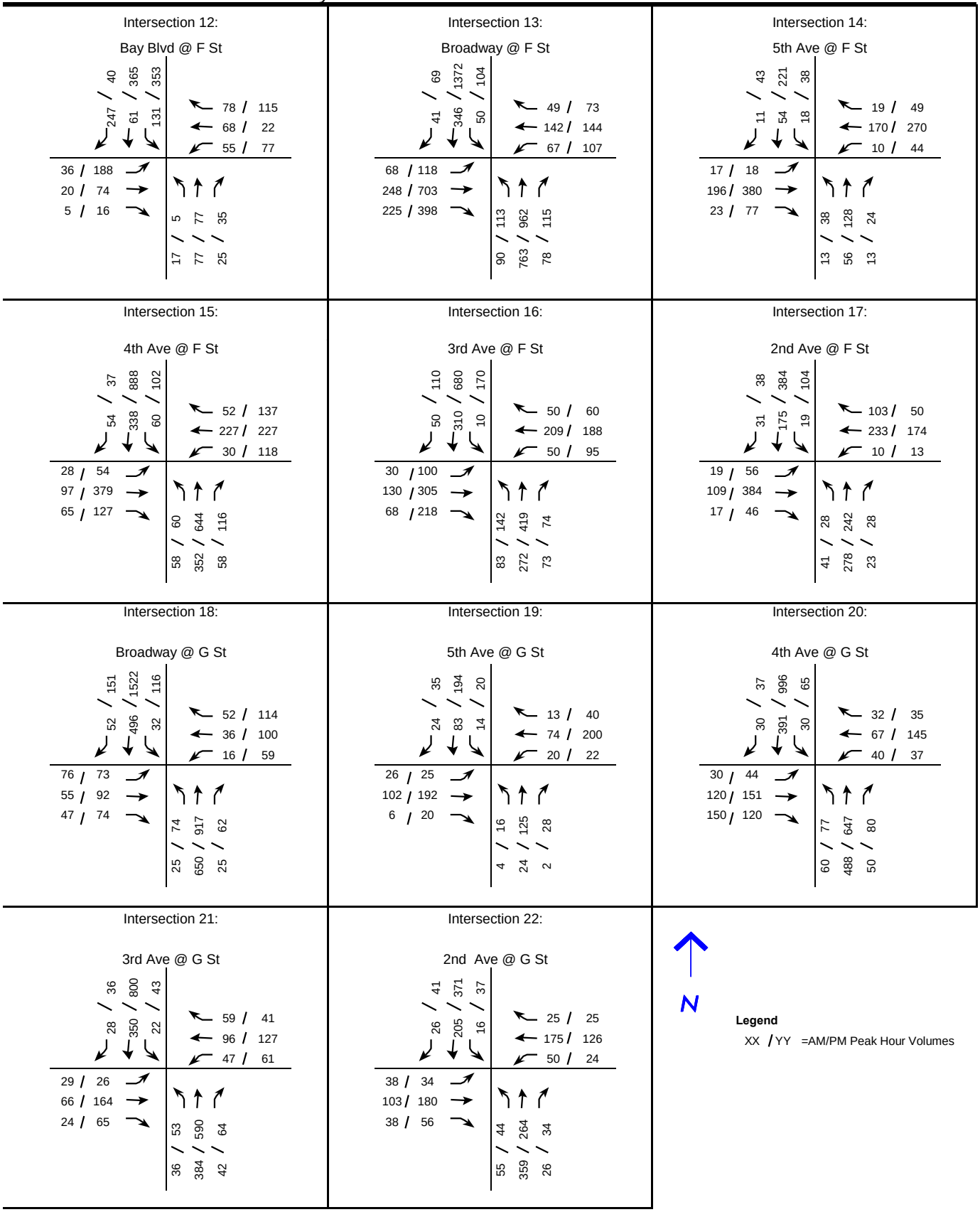


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Figure 5-1.1

Year 2030 Peak-Hour Traffic Volumes

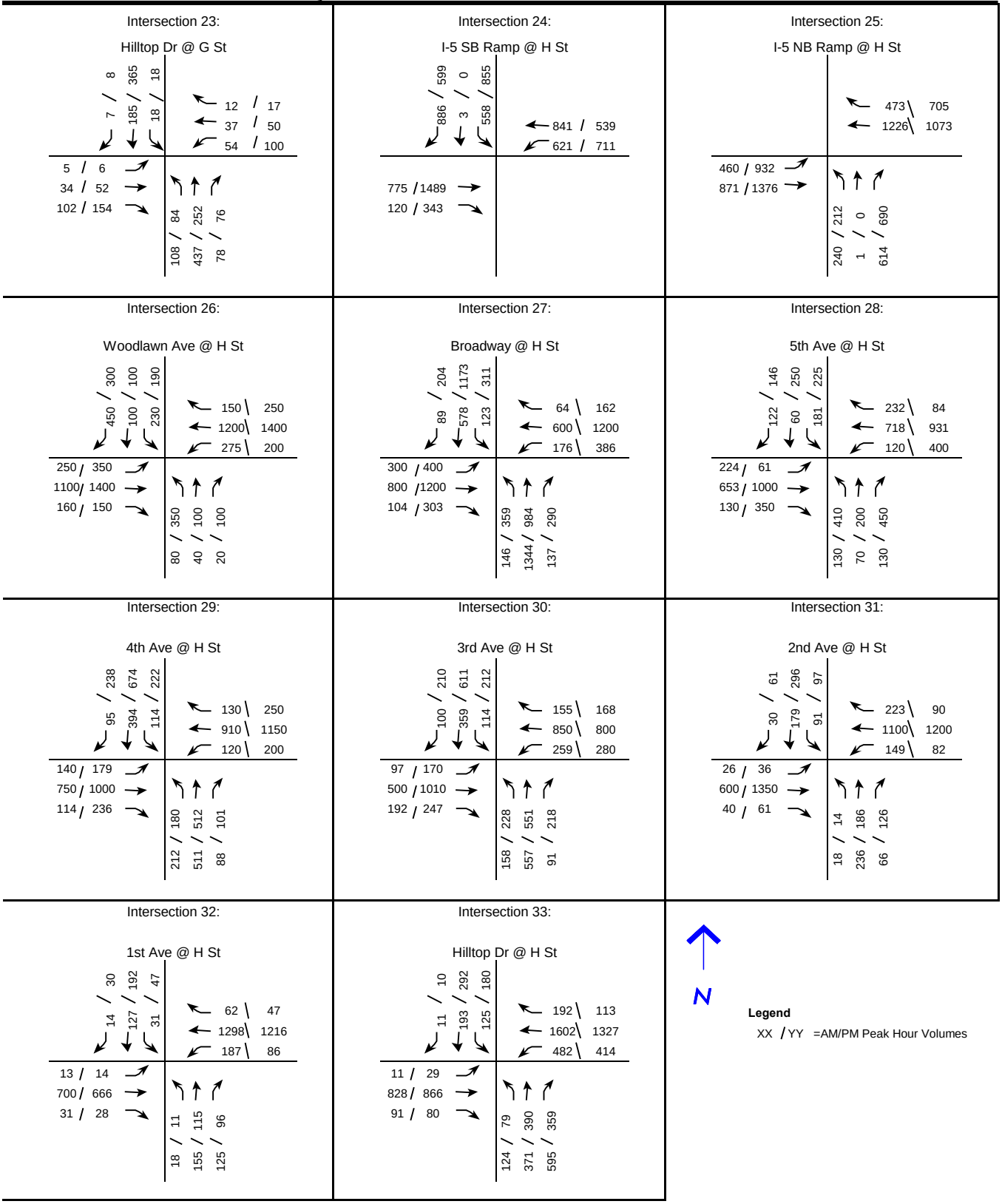
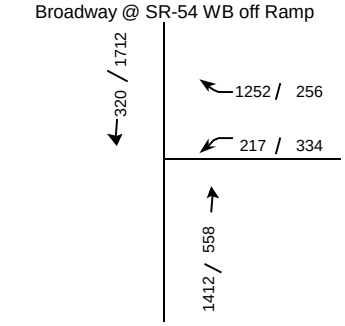


Figure 5-1.2
Year 2030 Peak-Hour Traffic Volumes

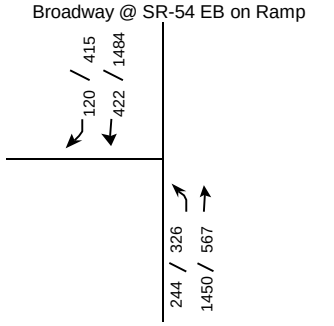
Intersection 34:

Broadway @ SR-54 WB off Ramp



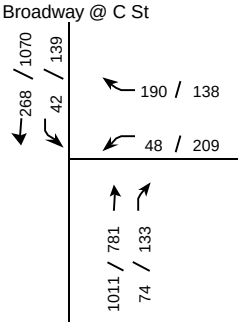
Intersection 35:

Broadway @ SR-54 EB on Ramp



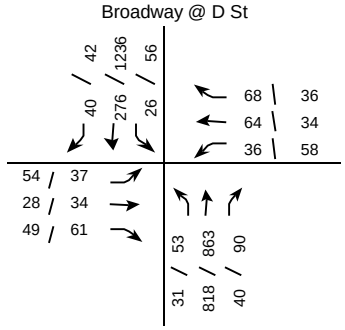
Intersection 36:

Broadway @ C St



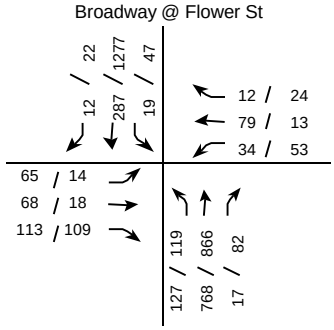
Intersection 37:

Broadway @ D St



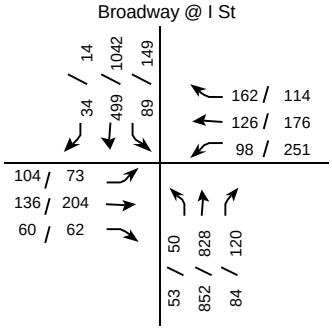
Intersection 38:

Broadway @ Flower St



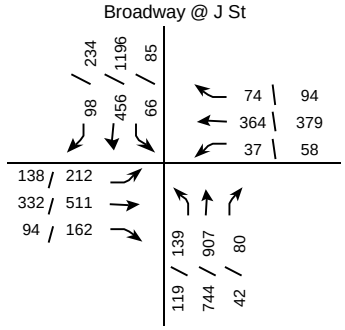
Intersection 39:

Broadway @ I St



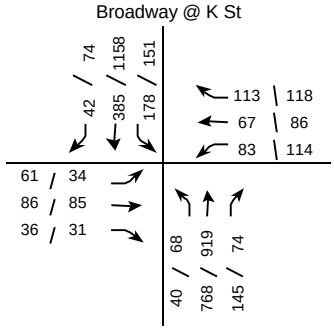
Intersection 40:

Broadway @ J St



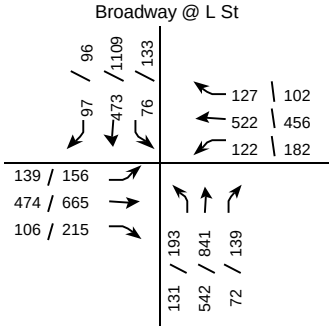
Intersection 41:

Broadway @ K St



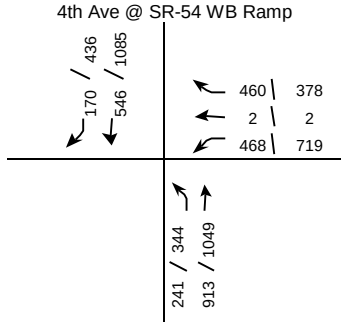
Intersection 42:

Broadway @ L St



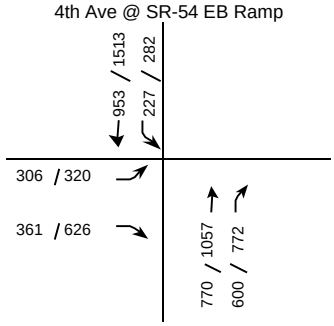
Intersection 43:

4th Ave @ SR-54 WB Ramp



Intersection 44:

4th Ave @ SR-54 EB Ramp



Legend

XX / YY =AM/PM Peak Hour Volumes

Kimley-Horn and Associates, Inc.

Figure 5-1.3

Year 2030 Peak-Hour Traffic Volumes

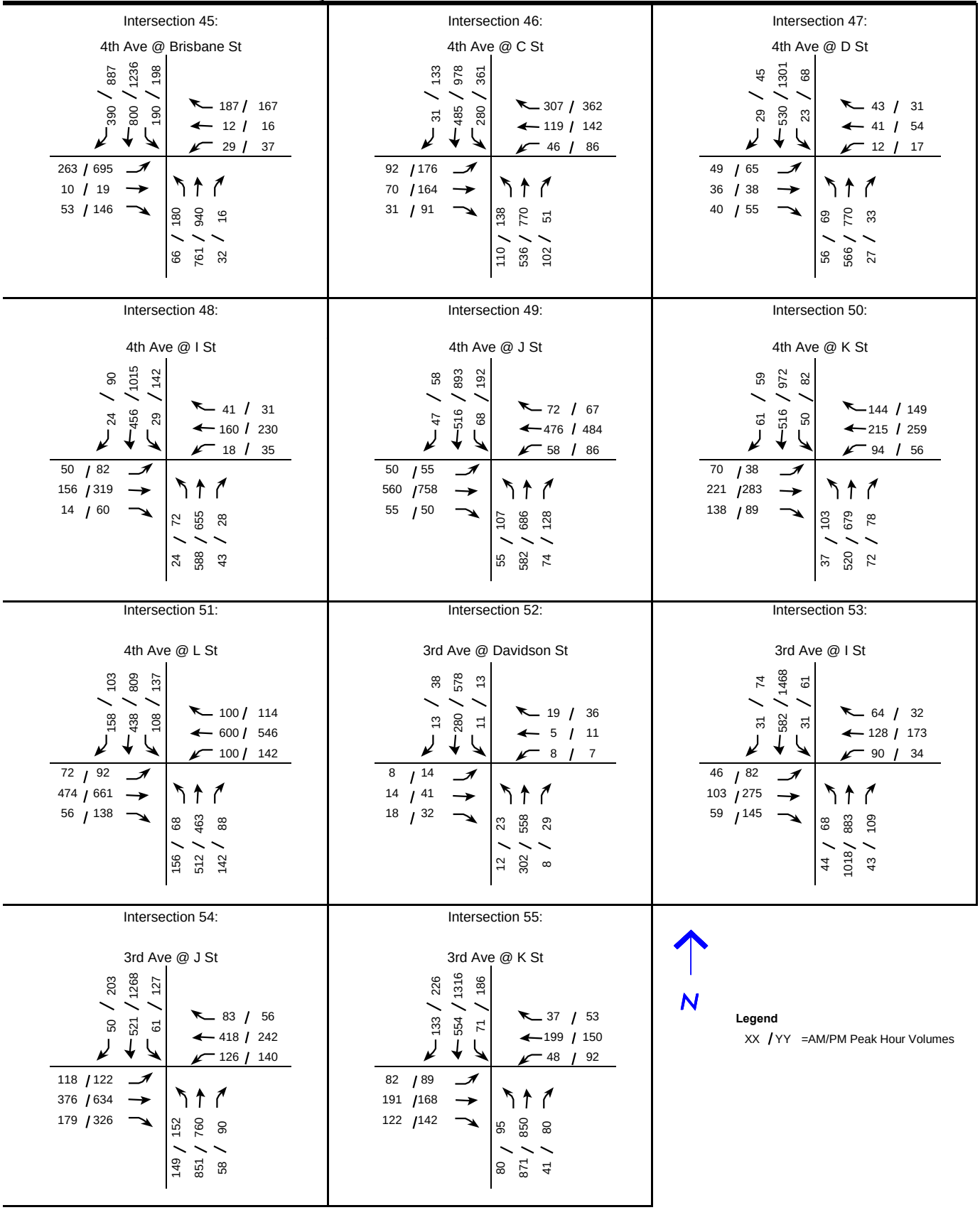


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Figure 5-1.4

Year 2030 Peak-Hour Traffic Volumes

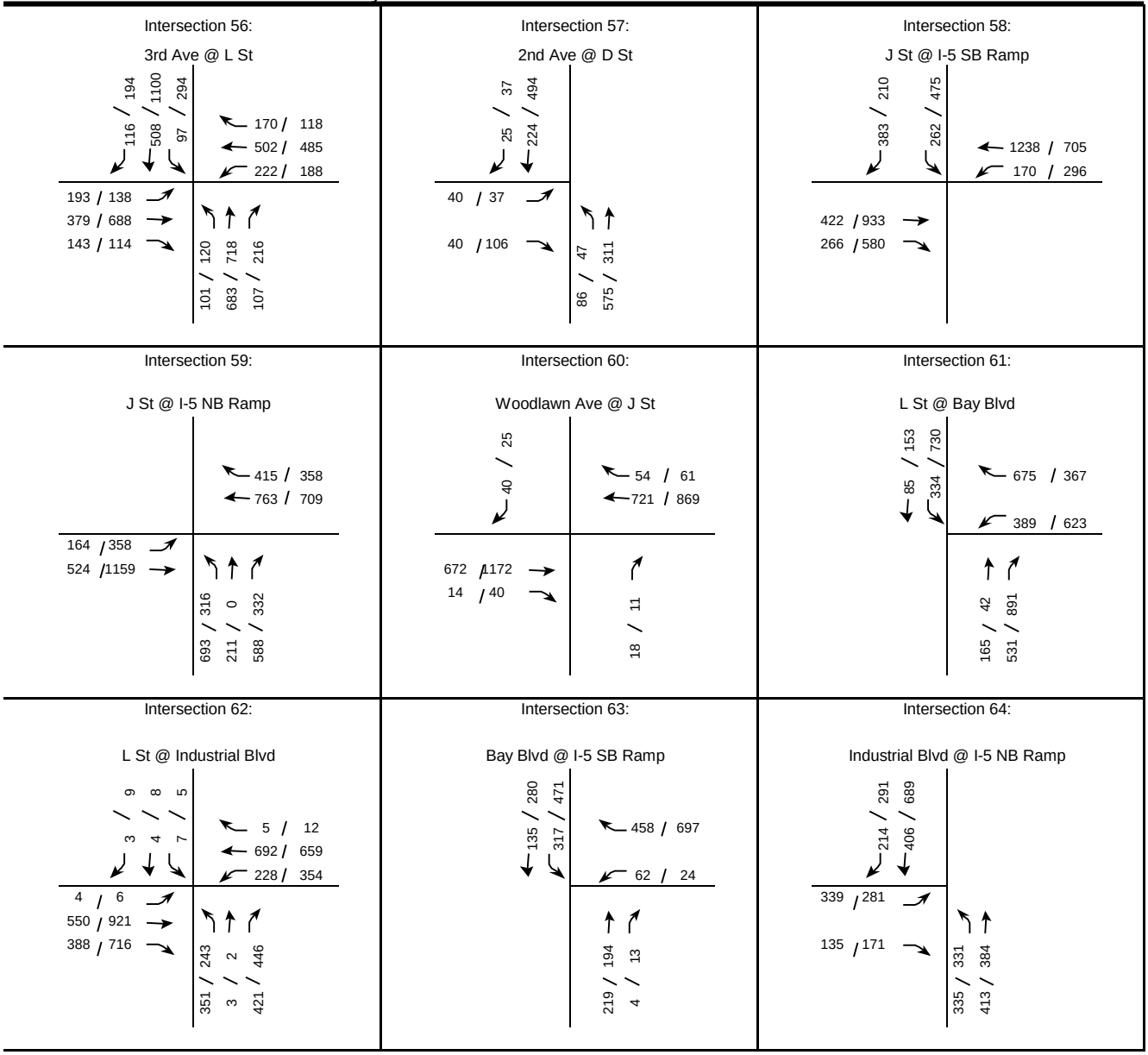

Figure 5-1.5

Year 2030 Peak-Hour Traffic Volumes

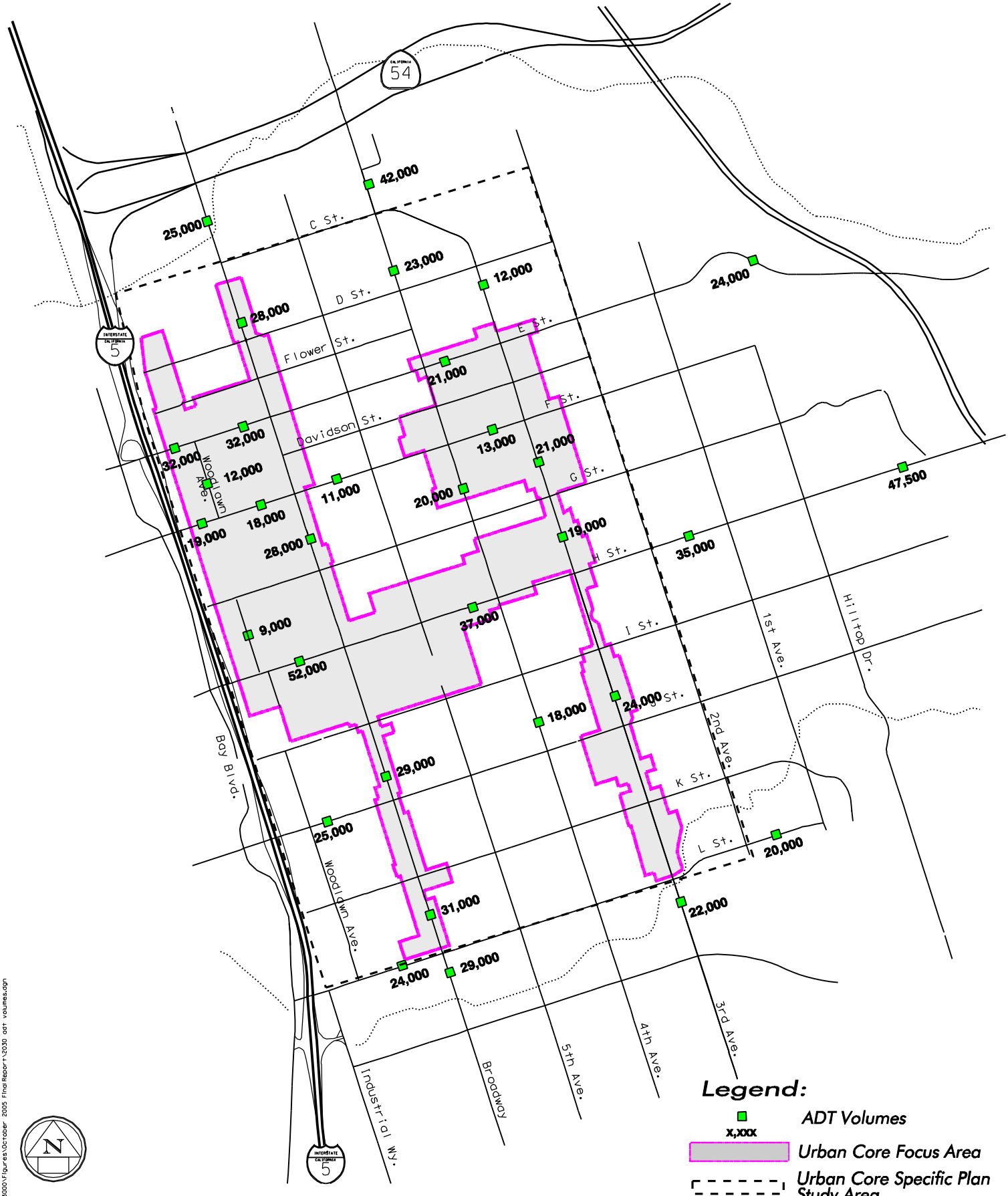

Figure 5-2

Year 2030 ADT Volumes

KIMLEY-HORN and ASSOCIATES

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Intersection Analysis

Table 5-1 displays the LOS analysis results for the study intersections under the Year 2030 Conditions scenario. As shown in this table, all study intersections operate at LOS D or better during both peak periods, except for the following 19 intersections:

- #1 Bay Boulevard/I-5 SB Ramp @ E Street (LOS E – AM Peak, LOS F – PM Peak);
- #2 I-5 NB Ramp @ E Street (LOS E – AM Peak);
- #13 Broadway @ F Street (LOS E – PM Peak);
- #24 I-5 SB Ramp @ H Street (LOS F – PM Peak);
- #25 I-5 NB Ramp @ H Street (LOS F – PM Peak);
- #26 Woodlawn Avenue @ H Street (LOS F – PM Peak);
- #27 Broadway @ H Street (LOS F – PM Peak);
- #28 5th Avenue @ H Street (LOS E – PM Peak);
- #29 4th Avenue @ H Street (LOS E – PM Peak);
- #33 Hilltop Drive @ H Street (LOS E – AM and PM Peak);
- #34 Broadway @ SR-54 WB Ramp (LOS F – AM Peak);
- #44 4th Avenue @ SR-54 EB Ramp (LOS F – PM Peak);
- #45 4th Avenue @ Brisbane Street (LOS E – PM Peak);
- #54 3rd Avenue @ J Street (LOS E – PM Peak);
- #57 2nd Avenue @ D Street (LOS E – PM Peak);
- #59 J Street @ I-5 NB Ramp (LOS F – AM Peak, LOS E – PM Peak);
- #61 L Street @ Bay Boulevard (LOS F – PM Peak);
- #63 Bay Boulevard @ I-5 SB Ramp (LOS F – AM and PM Peak); and
- #64 Industrial Boulevard @ I-5 NB Ramp (LOS F – PM Peak).

The majority of the interchange study intersections along I-5 or SR-54 would operate at an unacceptable LOS. In addition, many of the intersections along the H Street corridor would operate at an unacceptable LOS. As previously noted in Section 3, the delay at the E Street and H Street intersections affected by the trolley crossing would be worse than the delay shown in Table 5-1. Additional delays would be between 17 and 40 seconds per vehicle (depending on the direction and time of day) and drop the LOS by at least one grade. By providing a grade-separated trolley crossing at E Street and H Street, delays and LOS would be similar to the results shown in Table 5-1.

Appendix C contains the peak-hour intersections LOS calculation worksheets.

Roadway Segment Analysis

Table 5-2 summarizes the Year 2030 Conditions LOS analysis for the roadway segments located in the Urban Core. The projected volume, estimated using the approved transportation model of SANDAG, is compared to the acceptable volume of the roadways using the adopted functional classifications from the Chula Vista General Plan. As shown in this table, all roadway segments meet the adopted LOS standard of D for the Urban Street System, except for the following roadway segments:

- H Street between I-5 and Broadway (LOS F)
- H Street between Hilltop Drive and I-805 (LOS E)

TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

	INTERSECTION	PEAK HOUR	EXISTING		YEAR 2030		INCREASE IN DELAY	SIGNIFICANT IMPACT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
1	Bay Blvd-I-5 SB Ramp @ E St	AM	10.1	B	**58.4**	**E**	**48.3**	**YES**
		PM	16.6	B	**302.9**	**F**	**286.3**	**YES**
2	I-5 NB Ramp @ E St	AM	33.2	C	**60.5**	**E**	**27.3**	**YES**
		PM	18.2	B	31.9	C	13.7	NO
3	Woodlawn Ave @ E St	AM	21.7	C	25.8	C	4.1	NO
		PM	15.5	B	20.5	C	5.0	NO
4	Broadway @ E St	AM	16.9	B	30.3	C	13.4	NO
		PM	26.3	C	47.2	D	20.9	NO
5	5th Ave @ E St	AM	5.0	A	5.6	A	0.6	NO
		PM	6.4	A	7.7	A	1.3	NO
6	4th Ave @ E St	AM	13.5	B	16.2	B	2.7	NO
		PM	18.8	B	33.3	C	14.5	NO
7	3rd Ave @ E St	AM	11.9	B	12.9	B	1.0	NO
		PM	15.2	B	24.8	C	9.6	NO
8	2nd Ave @ E St	AM	7.3	A	15.5	B	8.2	NO
		PM	11.0	B	28.9	C	17.9	NO
9	1st Ave @ E St	AM	6.8	A	40.6	D	33.8	NO
		PM	5.5	A	10.1	B	4.6	NO
10	Flower St @ E St	AM	10.6	B	20.2	C	9.6	NO
		PM	12.5	B	37.1	D	24.6	NO
11	Bonita Glen Dr @ E St	AM	12.1	B	12.5	B	0.4	NO
		PM	16.5	B	23.0	C	6.5	NO
12	Bay Blvd @ F St	AM	8.8	A	9.8	A	1.0	NO
		PM	14.7	B	21.4	C	6.7	NO
13	Broadway @ F St	AM	16.5	B	17.7	B	1.2	NO
		PM	24.1	C	**66.1**	**E**	**42.0**	**YES**
14	5th Ave @ F St	AM	5.7	A	6.6	A	0.9	NO
		PM	8.2	A	10.0	A	1.8	NO
15	4th Ave @ F St	AM	13.5	B	15.3	B	1.8	NO
		PM	17.7	B	23.7	C	6.0	NO
16	3rd Ave @ F St	AM	13.9	B	15.9	B	2.0	NO
		PM	19.2	B	23.5	C	4.3	NO
17	2nd Ave @ F St	AM	9.7	A	13.4	B	3.7	NO
		PM	12.5	B	12.7	B	0.2	NO
18	Broadway @ G St	AM	12.3	B	14.0	B	1.7	NO
		PM	14.9	B	21.0	C	6.1	NO
19	5th Ave @ G St	AM	6.3	A	7.7	A	1.4	NO
		PM	7.5	A	8.3	A	0.8	NO
20	4th Ave @ G St	AM	8.9	A	12.8	B	3.9	NO
		PM	10.3	B	18.0	B	7.7	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING		YEAR 2030		INCREASE IN DELAY	SIGNIFICANT IMPACT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
21	3rd Ave @ G St	AM	8.6	A	11.8	B	3.2	NO
		PM	9.2	A	10.5	B	1.3	NO
22	2nd Ave @ G St	AM	14.1	B	22.2	C	8.1	NO
		PM	16.3	C	32.3	D	16.0	NO
23	Hilltop Dr @ G St	AM	16.7	C	33.7	D	17.0	NO
		PM	14.4	B	24.1	C	9.7	NO
24	I-5 SB Ramp @ H St	AM	28.8	C	36.7	D	7.9	NO
		PM	21.1	C	**84.5**	**F**	**63.4**	**YES**
25	I-5 NB Ramp @ H St	AM	12.7	B	47.6	D	34.9	NO
		PM	14.8	B	**138.4**	**F**	**123.6**	**YES**
26	Woodlawn Ave @ H St	AM	38.0	D	33.7	C	-4.3	NO
		PM	22.3	**F**	**260.6**	**F**	**238.3**	**YES**
27	Broadway @ H St	AM	25.7	C	42.7	D	17.0	NO
		PM	27.1	C	**118.1**	**F**	**91.0**	**YES**
28	5th Ave @ H St	AM	10.8	B	15.2	B	4.4	NO
		PM	11.3	B	**61.6**	**E**	**50.3**	**YES**
29	4th Ave @ H St	AM	22.1	C	38.6	D	16.5	NO
		PM	29.2	C	**59.4**	**E**	**30.2**	**YES**
30	3rd Ave @ H St	AM	19.3	B	23.0	C	3.7	NO
		PM	23.8	C	39.7	D	15.9	NO
31	2nd Ave @ H St	AM	8.4	A	13.7	B	5.3	NO
		PM	11.5	B	31.4	C	19.9	NO
32	1st Ave @ H St	AM	7.6	A	9.8	A	2.2	NO
		PM	8.2	A	12.5	B	4.3	NO
33	Hilltop Dr @ H St	AM	32.2	C	**58.3**	**E**	**26.1**	**YES**
		PM	41.3	D	**74.2**	**E**	**32.9**	**YES**
34	Broadway @ SR-54 WB Ramp	AM	**82.9**	**F**	**190.6**	**F**	**107.7**	**YES**
		PM	11.8	B	16.2	B	4.4	NO
35	Broadway @ SR-54 EB Ramp	AM	3.3	A	10.1	B	6.8	NO
		PM	6.3	A	17.7	B	11.4	NO
36	Broadway @ C St	AM	18.1	B	20.1	C	2.0	NO
		PM	15.1	B	18.1	B	3.0	NO
37	Broadway @ D Street	AM	9.2	A	12.1	B	2.9	NO
		PM	10.2	B	14.9	B	4.7	NO
38	Broadway @ Flower St	AM	11.5	B	12.3	B	0.8	NO
		PM	14.0	B	17.4	B	3.4	NO
39	Broadway @ I St	AM	16.3	B	16.4	B	0.1	NO
		PM	17.3	B	21.1	C	3.8	NO
40	Broadway @ J St	AM	13.6	B	15.7	B	2.1	NO
		PM	18.6	B	29.6	C	11.0	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING		YEAR 2030		INCREASE IN DELAY	SIGNIFICANT IMPACT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
41	Broadway @ K St	AM	11.7	B	14.5	B	2.8	NO
		PM	13.2	B	16.4	B	3.2	NO
42	Broadway @ L St	AM	15.5	B	17.5	B	2.0	NO
		PM	20.4	C	34.7	C	14.3	NO
43	4th Ave @ SR-54 WB Ramp	AM	14.7	B	23.1	C	8.4	NO
		PM	25.9	C	42.3	D	16.4	NO
44	4th Ave @ SR-54 EB Ramp	AM	13.4	B	37.2	D	23.8	NO
		PM	27.2	C	**95.2**	**F**	**68.0**	**YES**
45	4th Ave @ Brisbane St	AM	21.5	C	25.8	C	4.3	NO
		PM	27.3	C	**61.5**	**E**	**34.2**	**YES**
46	4th Ave @ C St	AM	23.2	C	24.7	C	1.5	NO
		PM	31.4	C	40.0	D	8.6	NO
47	4th Ave @ D St	AM	9.1	A	13.5	B	4.4	NO
		PM	10.5	B	12.6	B	2.1	NO
48	4th Ave @ I St	AM	8.8	A	11.9	B	3.1	NO
		PM	10.1	B	18.0	B	7.9	NO
49	4th Ave @ J St	AM	9.3	A	12.0	B	2.7	NO
		PM	15.7	B	42.7	D	27.0	NO
50	4th Ave @ K St	AM	8.5	A	12.7	B	4.2	NO
		PM	10.1	B	20.0	B	9.9	NO
51	4th Ave @ L St	AM	24.6	C	27.6	C	3.0	NO
		PM	26.6	C	35.3	D	8.7	NO
52	3rd Ave @ Davidson St	AM	9.9	A	14.7	B	4.8	NO
		PM	13.2	B	19.2	B	6.0	NO
53	3rd Ave @ I St	AM	10.1	B	11.6	B	1.5	NO
		PM	12.2	B	18.3	B	6.1	NO
54	3rd Ave @ J St	AM	18.8	B	22.9	C	4.1	NO
		PM	35.9	D	**74.5**	**E**	**38.6**	**YES**
55	3rd Ave @ K St	AM	9.5	A	12.3	B	2.8	NO
		PM	11.0	B	22.4	C	11.4	NO
56	3rd Ave @ L St	AM	18.1	B	22.9	C	4.8	NO
		PM	27.0	C	44.1	D	17.1	NO
57	2nd Ave @ D St	AM	14.9	B	31.2	D	16.3	NO
		PM	14.9	B	**36.0**	**E**	**21.1**	**YES**
58	J St @ I-5 SB Ramp	AM	8.9	A	17.5	B	8.6	NO
		PM	15.1	B	40.4	D	25.3	NO
59	J St @ I-5 NB Ramp	AM	10.6	B	**135.2**	**F**	**124.6**	**YES**
		PM	8.2	A	**61.7**	**E**	**53.5**	**YES**
60	Woodlawn Ave @ J St	AM	11.0	B	16.3	C	5.3	NO
		PM	11.9	B	18.2	C	6.3	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING		YEAR 2030		INCREASE IN DELAY	SIGNIFICANT IMPACT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
61	L St @ Bay Blvd	AM	16.8	C	22.7	C	5.9	NO
		PM	**120.3**	**F**	**203.0**	**F**	**82.7**	**YES**
62	L St @ Industrial Blvd	AM	18.9	B	30.9	C	12.0	NO
		PM	25.4	C	52.6	D	27.2	NO
63	Bay Blvd @ I-5 SB Ramp	AM	22.2	C	**84.0**	**F**	**61.8**	**YES**
		PM	48.6	**E**	**221.2**	**F**	**172.6**	**YES**
64	Industrial Blvd @ I-5 NB Ramp	AM	15.4	C	26.0	D	10.6	NO
		PM	17.7	C	**66.5**	**F**	**48.8**	**YES**

Notes:

ECL= Exceeds calculable limit . At intersections at or over capacity, the calculated delay value becomes unreliable.

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

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TABLE 5-2

YEAR 2030 ROADWAY SEGMENT LEVEL OF SERVICE SUMMARY

STREET	SEGMENT	STREET CLASSIFICATION (b)	DAILY TRAFFIC VOLUME	ACCEPTABLE VOLUME	LOS E CAPACITY	VOLUME TO CAPACITY (V/C)	DAILY SEGMENT LOS
E Street	I-5 - Woodlawn Avenue	4 Lanes Gateway Street	32,000	43,200	48,000	0.67 (b)	B
	Woodlawn Avenue - Broadway	4 Lanes Gateway Street	32,000	43,200	48,000	0.67 (b)	B
	Broadway - 1st Avenue	4 Lanes Urban Arterial	21,000	37,800	42,000	0.50 (b)	A
	1st Avenue - I-805	4 Lanes Gateway Street	24,000	43,200	48,000	0.50 (b)	A
F Street	Bay Boulevard - Woodlawn Avenue	4 Lanes Downtown Promenade	19,000	33,750	37,500	0.51 (b)	A
	Woodlawn Avenue - Broadway	4 Lanes Downtown Promenade	18,000	33,750	37,500	0.48 (b)	A
	Broadway - 4th Avenue	2 Lanes Downtown Promenade	11,000	14,400	16,000	0.69 (b)	B
	4th Avenue - 3rd Avenue	4 Lanes Downtown Promenade	13,000	33,750	37,500	0.35 (b)	A
H Street	I-5 - Broadway	4 Lanes Gateway Street (c)	52,000	43,200	48,000	1.08 (b)	**F**
	Broadway - 3rd Avenue	4 Lanes Urban Arterial	37,000	37,800	42,000	0.88 (b)	A
	3rd Avenue- Hilltop Drive	4 Lanes Urban Arterial	35,000	37,800	42,000	0.83 (b)	A
	Hilltop Drive - I-805	4 Lanes Gateway Street (d)	47,500	43,200	48,000	0.99 (b)	**E**
J Street	Bay Boulevard - Broadway	4 Lanes Major Street	25,000	40,000	37,500	0.67 (b)	B
L Street	I-5 - Broadway	4 Lanes Gateway Street	24,000	43,200	48,000	0.50 (b)	A
	Broadway - Hilltop Drive	4 Lanes Class I Collector	20,000	22,000	27,500	0.73 (b)	C
Woodlawn Avenue	E Street - F Street	2 Lanes Downtown Promenade	12,000	14,400	16,000	0.75 (b)	C
	G Street - H Street	2 Lanes Downtown Promenade	9,000	14,400	16,000	0.56 (b)	A
Broadway	SR-54 - C Street	4 Lanes Gateway Street	25,000	43,200	48,000	0.52 (b)	A
	C Street - E Street	4 Lanes Commercial Boulevard	28,000	33,750	37,500	0.75 (b)	C
	E Street - H Street	4 Lanes Commercial Boulevard	28,000	33,750	37,500	0.75 (b)	C
	H Street - K Street	4 Lanes Commercial Boulevard	29,000	33,750	37,500	0.77 (b)	C
	K Street - L Street	4 Lanes Commercial Boulevard	31,000	33,750	37,500	0.83 (b)	D
	South of L Street	4 Lanes Major Street	29,000	40,000	37,500	0.77	C
4th Avenue	SR-54 - C Street	6 Lanes Gateway Street	42,000	61,200	68,000	0.62 (b)	B
	C Street - E Street	4 Lanes Urban Arterial	23,000	37,800	42,000	0.55 (b)	A
	E Street - H Street	4 Lanes Urban Arterial	20,000	37,800	42,000	0.48 (b)	A
	H Street - L Street	4 Lanes Urban Arterial	18,000	37,800	42,000	0.43 (b)	A
3rd Avenue	C Street - E Street	4 Lanes Commercial Boulevard	12,000	33,750	37,500	0.32 (b)	A
	E Street - G Street	4 Lanes Downtown Promenade	21,000	33,750	37,500	0.56 (b)	A
	G Street - H Street	4 Lanes Downtown Promenade	19,000	33,750	37,500	0.51 (b)	A
	H Street - L Street	4 Lanes Commercial Boulevard	24,000	33,750	37,500	0.64 (b)	B
	South of L Street	4 Lanes Class I Collector	22,000	22,000	27,500	0.80	C

NOTE: Values in **bold** indicate roadway segments exceeding the City's minimum performance standard.
(a) Street classification is based on the standards provided in the 2005 Chula Vista General Plan.
(b) This roadway segment is part of the Urban Core Circulation Element.
(c) This roadway segment is classified as a 6-lane roadway, but is assumed to function as a 4-lane roadway for this scenario.
(d) The ADT was taken from the March 25, 2005 Espanada Mixed Use Development Traffic Study prepared by Darnell & Associates, Inc.

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Future Transit Service

A number of regional transit improvements are envisioned that will either serve the Urban Core area. Many of these lines provide transit stations within the Urban Core Specific Planning area and are integrated into the land use and transportation components of the specific plan. Other routes are located with transit stations nearby; these routes could serve the urban core area. It should be noted that most routes listed below do not have implementation dates except for the first phase of the regional BRT project and that some of the route numbers may change in the future. **Figure 5-3** depicts those planned regional routes in the South Bay.

Route 510 (Existing Blue Line Trolley) would have increased frequency of service. LRT headways would be reduced from 10 minutes to 5 minutes. In order to achieve this level of transit service, it would be necessary to grade separate the LRT tracks from key surface streets, such as E Street and H Street within the project area.

South Bay Transit First Project would provide Regional Bus Rapid Transit (BRT) service between Otay Ranch in eastern Chula Vista and downtown San Diego. The first phase of the project would follow I-805 and SR-94, along with East Palomar Street. Phase 1 of the project could be completed by the Year 2010. The second phase of the project would extend the line to the Otay Border crossing and serve businesses in Otay Mesa.

Route 540 (I-5 Express Service) would provide Regional Bus Rapid Transit (BRT) service from San Ysidro to downtown San Diego and Old Town. This route would use median lanes in I-5 and would have a transit stop at H Street (with elevators to the H Street over crossing at I-5. This route would have infrequent stations, which would allow for shorter travel times, as compared to Route 510.

Route 627 (H Street BRT) would provide a transit connection between the Chula Vista Urban Core Specific Plan area and Southwestern College and the Eastern Urban Center. This route will connect the major activity centers in the redeveloping areas of western Chula Vista to the rapidly growing areas of eastern Chula Vista.

Route 680 (Sorrento Valley to San Ysidro International Border) would provide Regional BRT service between the San Ysidro and Sorrento Mesa along the I-805 corridor. This service would connect Chula Vista to major employment centers in Kearny Mesa and Sorrento Mesa. Transit stations for this route would be located on I-805 at H Street.

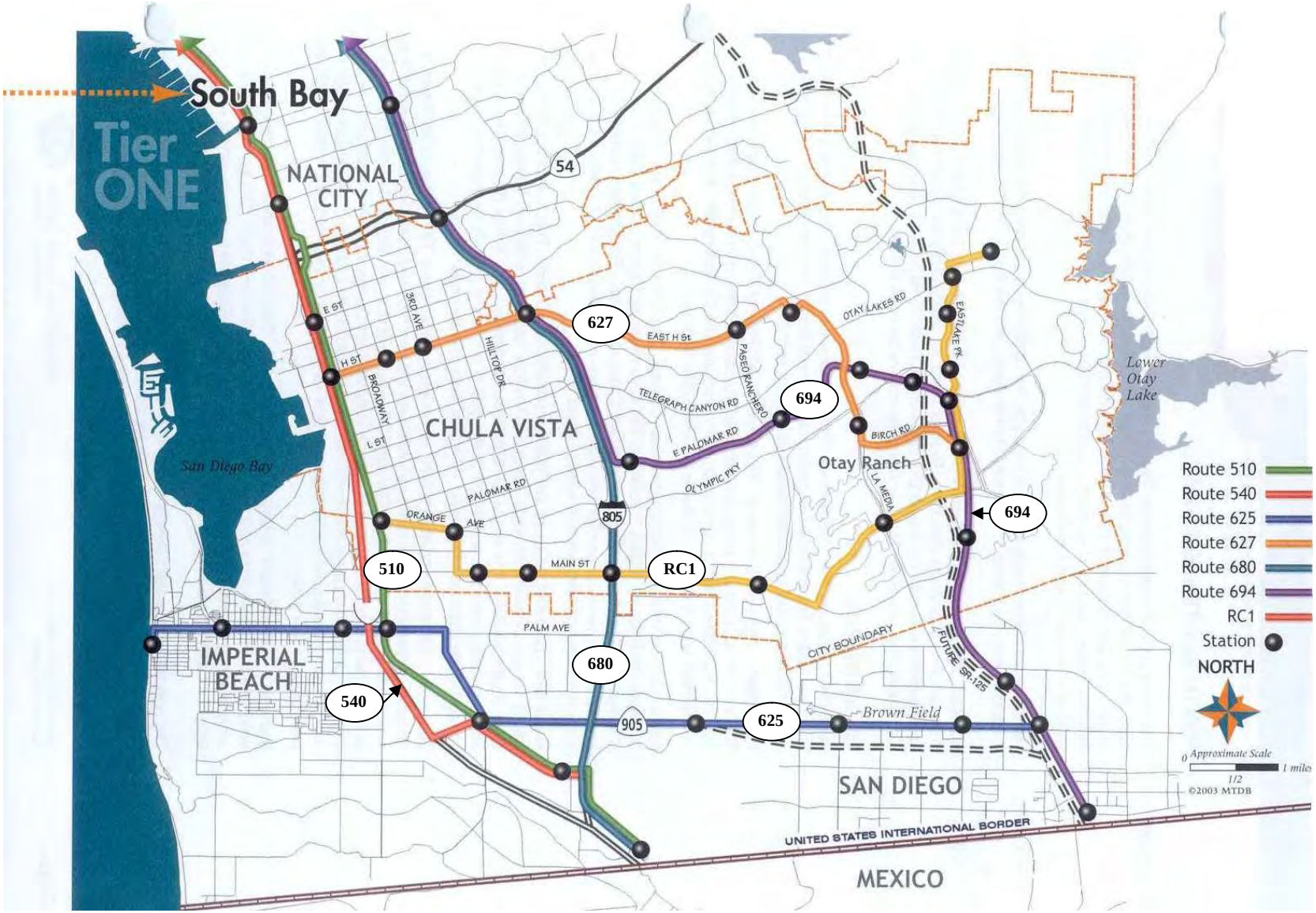

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Figure 5-3
Regional Transit Routes

6.0 YEAR 2030 WITH IMPROVEMENTS CONDITIONS

This section provides a description of the Year 2030 traffic conditions at locations where improvements were assumed due to the addition of a project feature or recommended to achieve acceptable LOS. Project features were assumed at locations where either the roadway segment or study intersection operates within acceptable thresholds, but were due to improvements associated with the UCSP. Improvements are recommended at the majority of roadway segments/intersections that exceeded the acceptable thresholds.

Road Network

The following section describes the recommended improvements along the roadway segments in the Urban Core study area. These recommended roadway widths will be used in developing the parkway recommendations and ROW dimensions. It should be noted that right-of-way (ROW) value for the Woodlawn Avenue segment is not shown on the cross section figure due to the uncertainty of the park area at this time.

Table 6-1 summarizes the proposed changes to the existing roadway network. It should be noted that roadway segments that did not have any changes compared to existing conditions were omitted from the table. As shown in the table, all improvements shown for Third Avenue, F Street, Broadway, and Woodlawn Avenue would be considered project features. Improvements along E Street and H Street are recommended to achieve acceptable LOS.

Figures 6-1 to **6-10** illustrate the proposed cross sections for the corridors of E Street, F Street, H Street, Broadway, 3rd Avenue, and Woodlawn Avenue.

TABLE 6-1
PROPOSED ROADWAY SEGMENT DIMENSIONS

Street Segment	Total Existing Travel Lanes	Total Proposed Travel Lanes	Existing Turn Lane/Median	Proposed Turn Lane/Median	Existing Curb-to-Curb Width	Proposed Curb-to-Curb Width	Existing Parking	Proposed Parking	Existing Bike Lanes	Proposed Bike Lanes
Project Feature										
Third Avenue between E Street and F Street	2	2	No Median	No Median	72’	24’/68’ *	Y	Y/N *	N	N
Third Avenue between F Street and Madrona Street	4	2	Raised Median	Raised Median	101’	24’/68’ *	Y	Y/N *	N	N
Third Avenue between Madrona Street and G Street	4	2	No Median	No Median	72’	24’/68’ *	Y	Y/N *	N	N
F Street between Third Avenue and Fourth Avenue	4	2	Raised Median, Bike Lanes (Class III)	Two-way Left Turn Lane/Raised Median, Bike Lanes (Class I)	65’	48’	Y	Y	Y	Y
F Street between Fourth Avenue and I-5	2	2	No Median, Bike Lanes (Class III)	Two-way Left Turn Lane/Raised Median, Bike Lanes (Class I)	40’	48’	Y	Y	Y	Y
Broadway between E Street And F Street	4	4	No Median	Raised Median, Bike Lanes (Class II)	68’	82’	Y	Y	N	Y
Broadway between F Street and H Street	4	4	Two-way Left Turn Lane	Raised Median, Bike Lanes (Class II)	82’	82’	Y	Y	N	Y
Woodlawn Avenue between E Street and H Street	2	2	No Median	Park Area	36’	Varies	Y	Y	N	N
Improvements to Achieve Acceptable LOS										
E Street between I-5 and 300’ east of I-5	4	4	Two-Way Left Turn Lane	Two-Way Left Turn Lane, Westbound Right Turn Lane	70’	76’	N	N	N	N
H Street between I-5 and Broadway	4	6	Two-Way Left Turn Lane	Raised Median, Bike Lanes (Class II)	64’	94’	N	N	N	Y

* The 24-foot cross section assumes no parking along Third Avenue and the 68-foot cross section assumes diagonal parking on both sides of Third Avenue.

E Street Corridor

The roadway cross section on E Street is adequate to serve future traffic needs except for the segment between Woodlawn Avenue and I-5. To mitigate the intersection impact at the I-5 NB Ramp with E Street, a westbound right-turn lane is required. It is recommended that E Street be widened between Woodlawn Avenue and I-5, which would add an additional six feet in the curb-to-curb width. This segment will need an additional 22 feet of ROW. This added width will allow for an extended right-turn lane on westbound E Street onto the I-5 northbound on-ramp. This improvement would help to reduce the queues in the westbound direction and improve the operations at the I-5 NB ramp and at Woodlawn Avenue intersection.

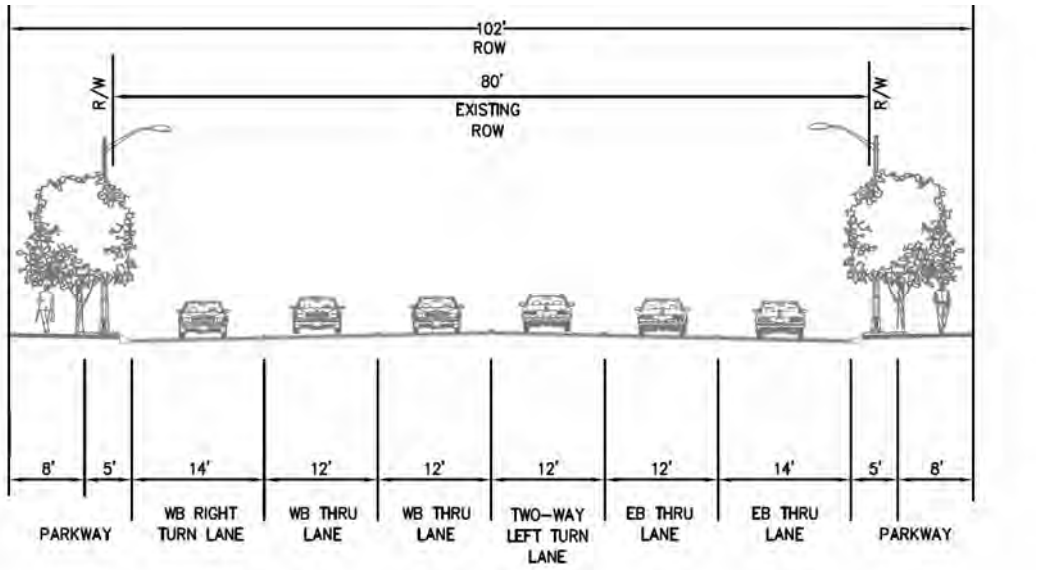


Figure 6-1 Proposed Cross Section, E Street Between I-5 and 300' East of I-5 N Ramp

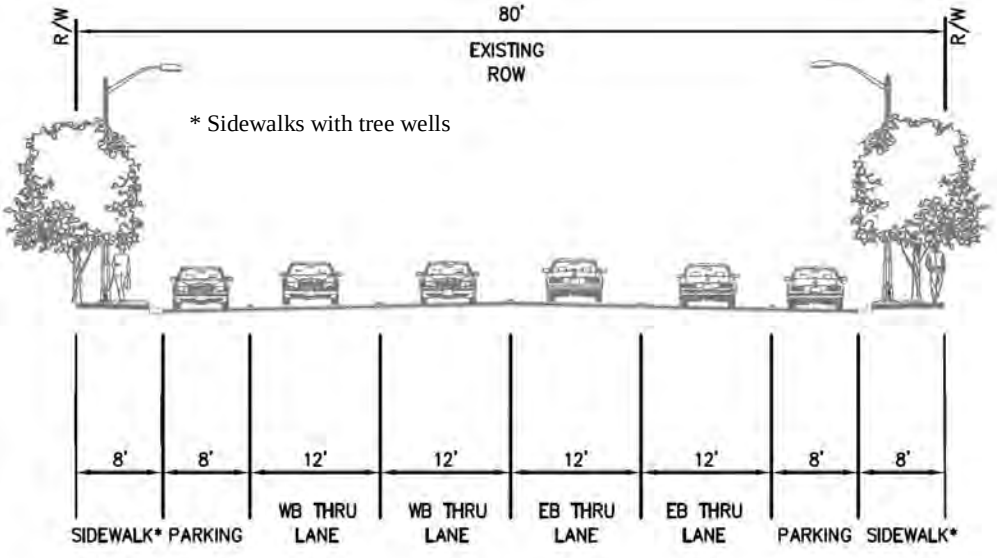


Figure 6-2 Proposed Cross Section, E Street Between 3rd Avenue and Broadway

F Street Bike Lanes

As a project feature of the Urban Core Specific Plan, Class I bike lanes would be added to F Street between Third Avenue and I-5. The new Class I bike lanes ("bikeway") will improve the connectivity of the Urban Core to the Bayfront Area encouraging better synergy between uses/users on the Bayfront and Urban Core, including pedestrians and bicyclists. Wide parkways, off-street bike lanes, and wide sidewalks will provide an opportunity to stroll or bicycle through the Urban Core. A Class II facility would exist on F Street where a Class I bikeway cannot be accommodated due to mature trees or new/existing medians. For F Street, a 16-foot parkway is provided between Fourth Avenue and Broadway and a 12-foot parkway is provided between Third Avenue and Fourth Avenue. Existing trees from Third Avenue to Broadway are proposed to be preserved and incorporated into the streetscape theme. It is suggested that the overhead utility line be placed underground as part of this improvement project.

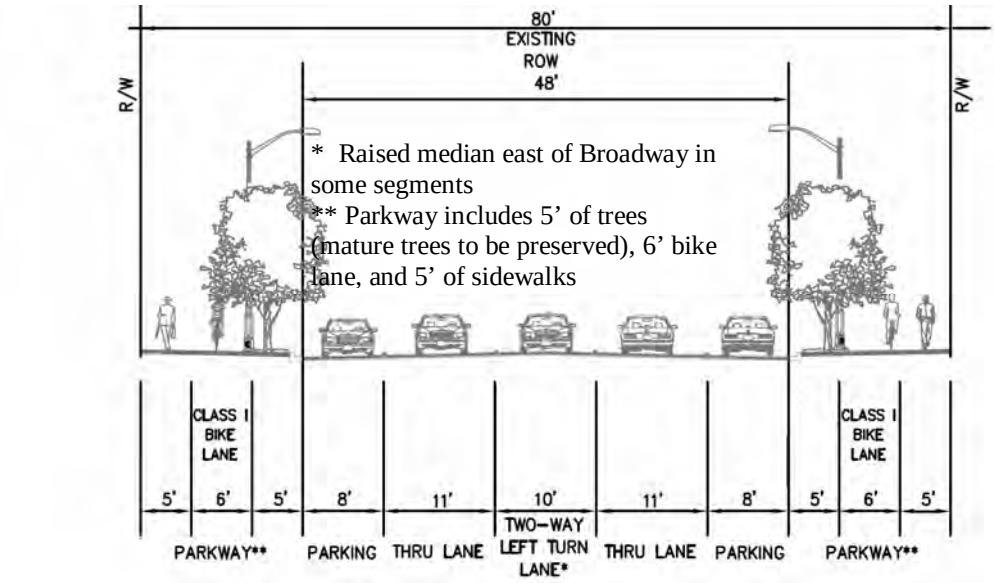


Figure 6-3 Proposed Cross Section, F Street Between Third Avenue and I-5

H Street Corridor

The segment of H Street from Third Avenue to Broadway will be widened by eight feet. The new segment configuration will feature two travel lanes and a bike lane in each direction, as well as a raised center median. One side of the street will also have parallel parking.

An additional 30 feet in the curb-to-curb width will be added to H Street between Broadway and I-5 to include an additional travel and in both directions. This improvement is consistent with the ultimate classification of H Street as defined in the adopted General Plan. The additional travel lane is needed to accommodate buildout daily and peak-hour traffic on H Street and would improve the operations along this segment.

Further, a Class II bikeway is proposed to be added to H Street between Third Avenue and I-5. H Street is intended as the "backbone" of the Urban Core, as it connects the transit focus areas at H Street/Third Avenue and H Street/I-5 and facilitates local and regional transit routes (and Bus Rapid Transit in the future). Twenty-foot wide sidewalks are proposed in order to create a grand boulevard feeling and promote pedestrian use.

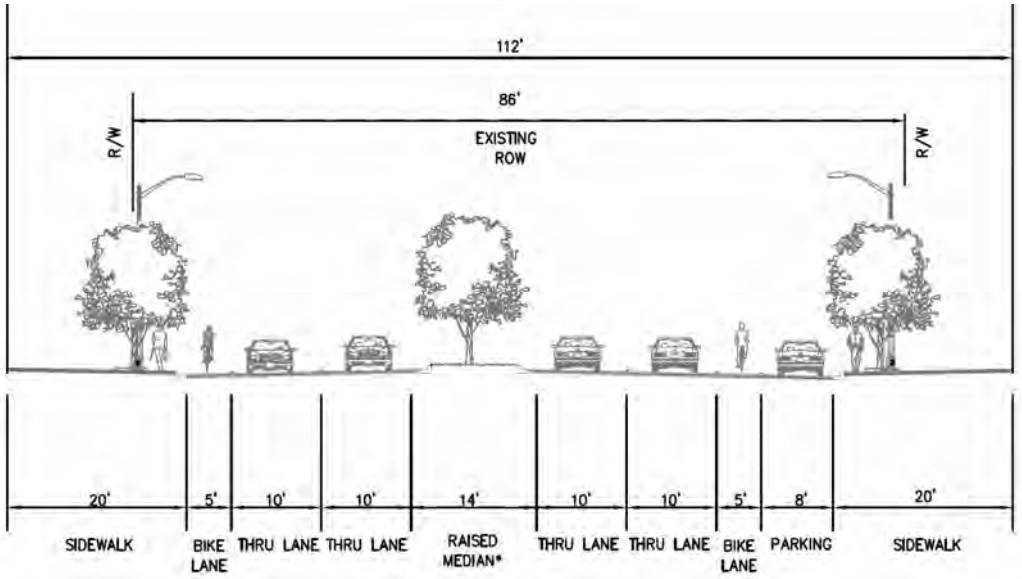


Figure 6-4 Proposed Cross Section, H Street Between Third Avenue and Broadway

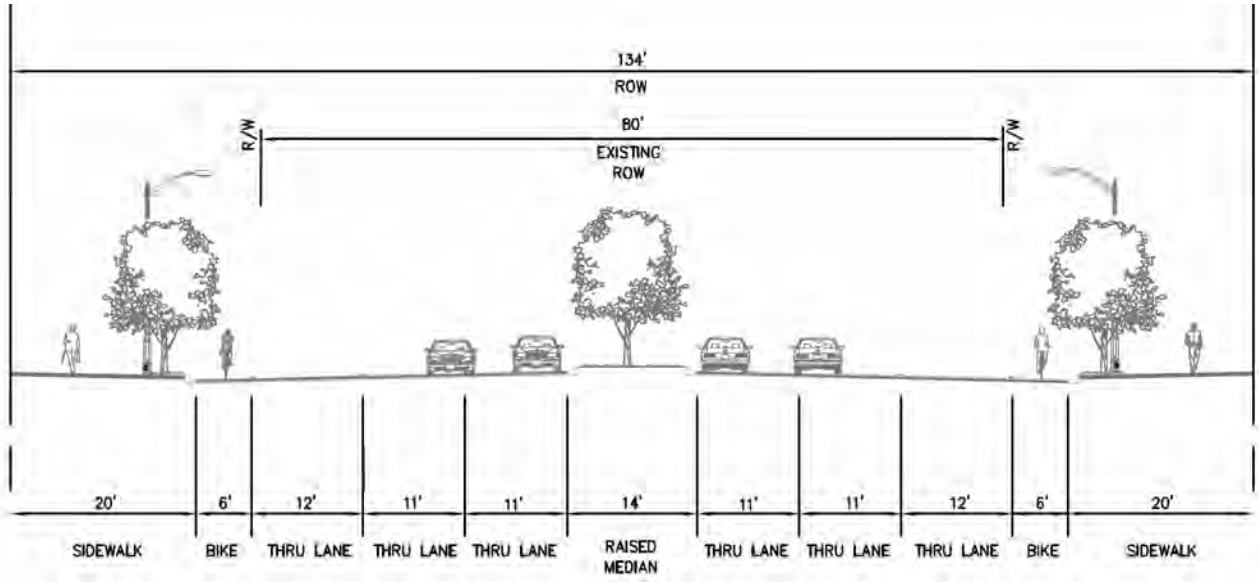


Figure 6-5 Proposed Cross Section, H Street Between Broadway and I-5

Broadway Corridor

Broadway would be improved by adding a 12-foot raised median as a project feature. In addition, a Class II bikeway is proposed to be added along Broadway between C Street and L Street. Broadway will be widened by 14 feet between E Street and F Street to accommodate a final configuration consisting of the raised median, bike lanes in both directions, and narrower traffic lanes. Between F Street and H Street, the roadway would not need to be widened and the existing median would be converted to a raised median. Nine-foot wide sidewalks will support pedestrian circulation. It is proposed to retain the existing palm trees within parkway areas.

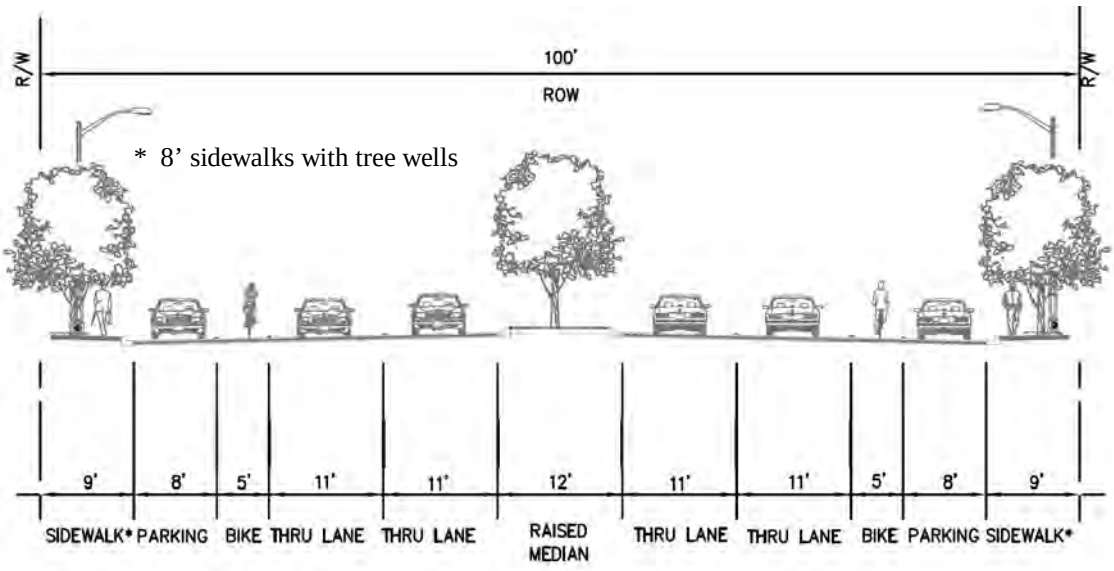


Figure 6-6 Proposed Cross Section, Broadway Between C Street and L Street

3rd Avenue Pedestrian Enhancements

As a project feature of the Urban Core Specific Plan, the sidewalks on 3rd Avenue between E Street and G Street will be widened. The widening of the sidewalks will encourage a higher pedestrian use of 3rd Avenue and provide opportunity for outdoor activity areas within the Village Area. The cross section of 3rd Avenue varies greatly between E Street and G Street. The roadway width varies between 72 feet and 101 feet.

The roadway will be narrowed to provide one through lane in each direction between E Street and G Street. The remainder of Third Avenue to L Street will stay in the current four-lane configuration. It is proposed to retain the existing median. Three distinct cross sections will be provided. On-street parking may be reduced with the implementation of the Third Avenue enhancements. It is recommended that these enhancements be provided in coordination with the provision of off-street parking in the vicinity so that parking impacts do not occur to surrounding areas.

Diagonal parking will be provided for most parts of Third Avenue. Figure 6-7 shows the cross section where angled parking is permitted. Due to relatively high through traffic volumes, it is recommended that the roadway be of sufficient width to allow vehicles to back out without blocking through traffic lanes. It should be noted that the curb-to-curb dimension is not reduced where diagonal parking is provided on the segment of Third Avenue between E Street and F Street.

Figure 6-8 illustrates selected mid-block locations where pedestrian crossing will occur. The roadway would be narrowed to 24 feet by extending the curb into the street. Curbs will be extended toward the roadway centerline about 38 feet on each side of the roadway. This reconfiguration would allow for additional pedestrian crossings with reduced crossing distances at selected locations.

Figure 6-9 shows the treatment at intersections. This cross section allows for a right-turn lane and a left-turn lane to be provided. Although the turning volumes from Third Avenue are not very high, these lanes are needed to remove turning traffic from the through traffic. Turning vehicles will need to yield to anticipated high pedestrian traffic volumes; the turn lanes allow these yielding vehicles to pull out of the through travel lanes. This intersection configuration will adequately accommodate future traffic demands along Third Avenue while providing a significantly enhanced pedestrian friendly streetscape.

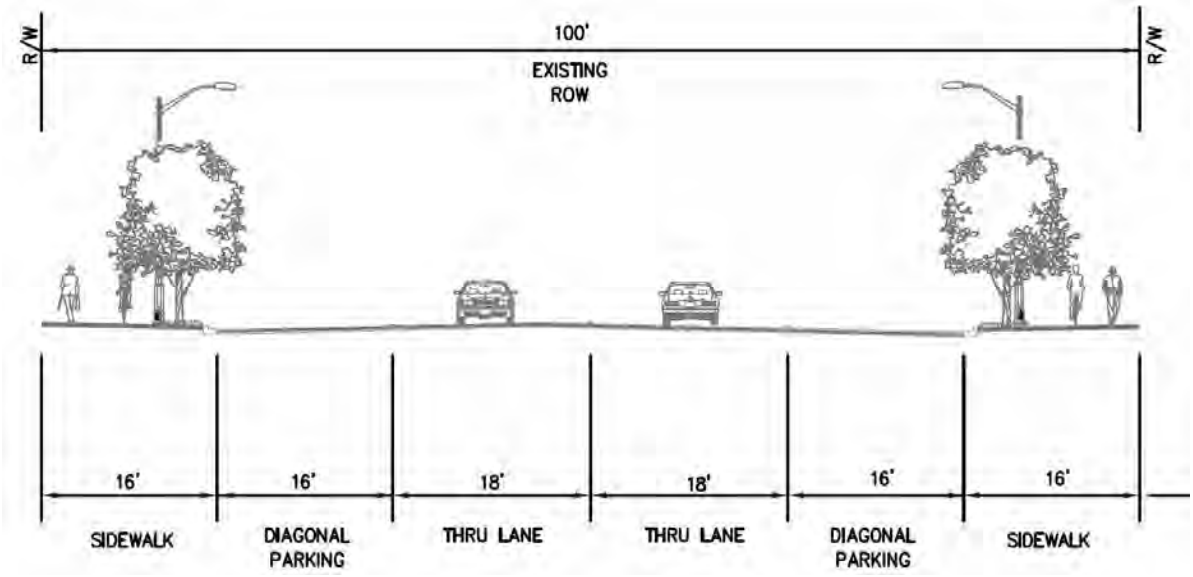


Figure 6-7 Proposed Cross Section, 3rd Avenue With Diagonal Parking

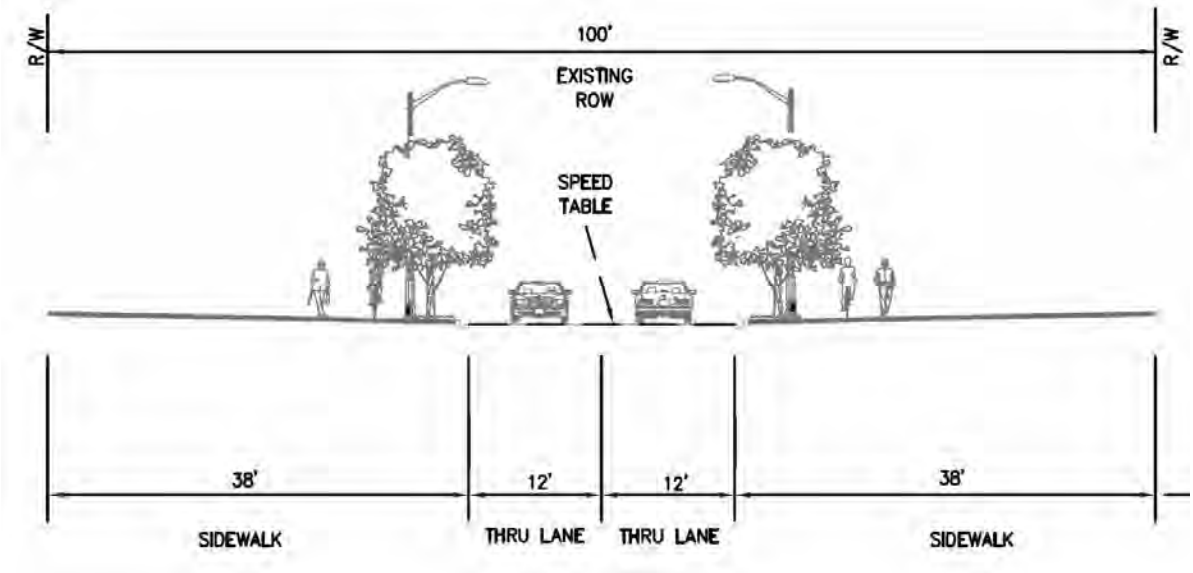


Figure 6-8 Proposed Cross Section, 3rd Avenue Without Diagonal Parking

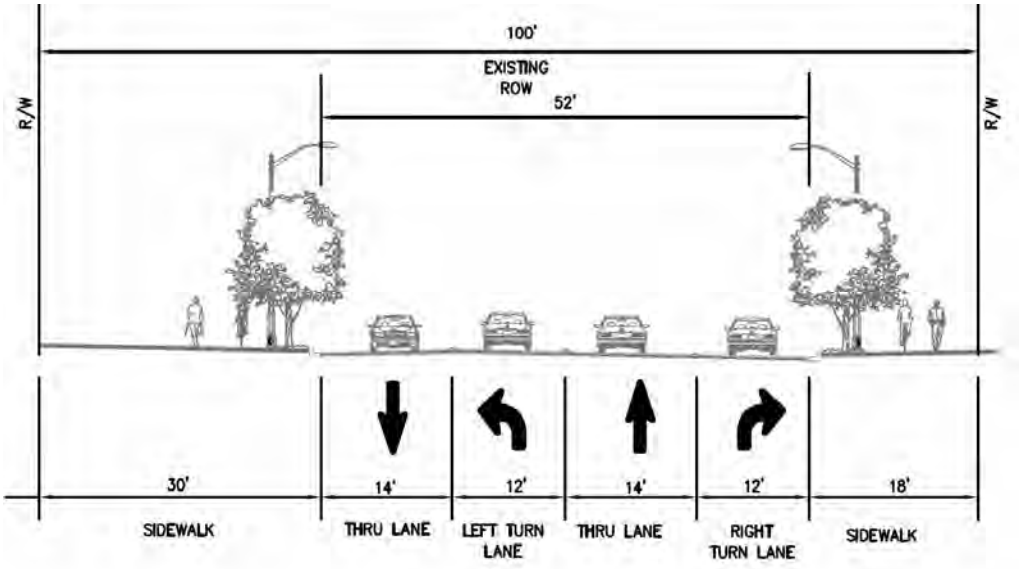


Figure 6-9 Proposed Cross Section, 3rd Avenue At Signalized Intersections

Woodlawn Avenue Couplet

As a project feature, Woodlawn Avenue would be extended and converted to a one-way couplet between south of E Street and north of H Street. Woodlawn Avenue is not built as a continuous roadway between E Street and H Street. The creation of the one-way couplet would include the construction of a neighborhood park between the one-way streets. The neighborhood park may include a variety of recreational uses such as playgrounds, walkways, and basketball courts. The couplet could be implemented over time as property redevelops.

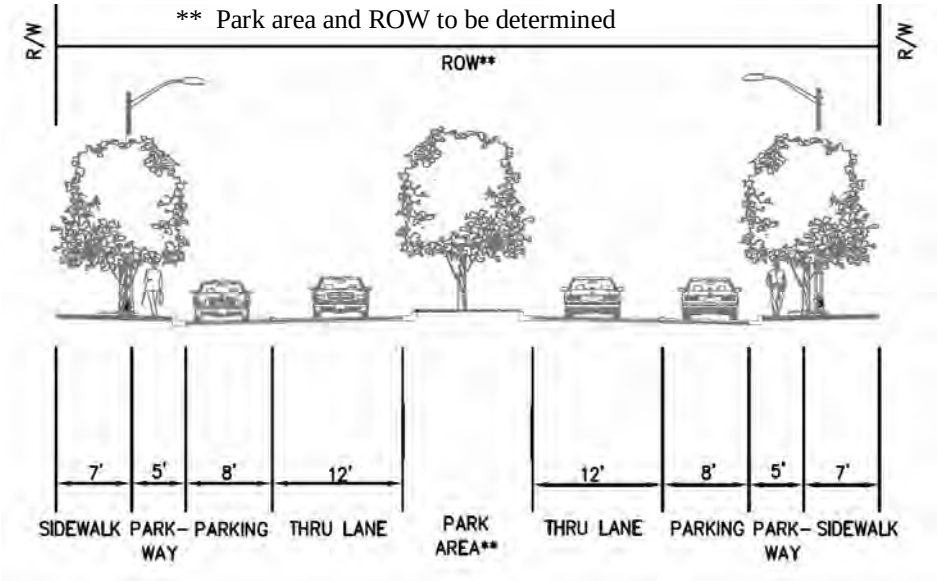


Figure 6-10 Proposed Cross Section, Entire Length of Woodlawn Avenue

Roadway Segment Analysis

Table 6-2 summarizes the Year 2030 With Improvement Conditions LOS analysis for the roadway segments with assumed improvements located in the Urban Core. As shown in this table, H Street between I-5 and Broadway would be widened to a six-lane gateway. As a result, the acceptable ADT would increase and result in an acceptable LOS. For 3rd Avenue between E Street and G Street, this segment would be retained or narrowed as a two-lane downtown promenade. As a result, the acceptable ADT would decrease and result in an unacceptable LOS. However, 3rd Avenue corridor intersections would operate at acceptable levels of service and the narrowing of 3rd Avenue and increasing the width of the sidewalks would create a friendlier pedestrian atmosphere.

TABLE 6-2

YEAR 2030 WITH IMPROVEMENTS CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE SUMMARY

STREET	SEGMENT	DAILY TRAFFIC VOLUME	BEFORE IMPROVEMENTS	ACCEPTABLE VOLUME	DAILY SEGMENT LOS	AFTER IMPROVEMENTS	ACCEPTABLE VOLUME	DAILY SEGMENT LOS
H Street	I-5 - Broadway	52,000	4 Lanes	43,200	**F**	6 Lanes	61,200	D
3rd Avenue	E Street - G Street	21,000	2/4 Lanes	14,400/ 33,350	A	2 Lanes	14,400	**F**

K:\095413000\Excel\October 2005 Final Report\[413rs050504.xls]Table 6-2

Intersection Improvements

Due to the unique nature of urban revitalization, the exact timing, sequence and extent of infill development is hard to predict and doing so would be speculative. The anticipated 20-25 year implementation of the Specific Plan therefore necessitates a different approach to implementing the recommended long-term intersection improvements in order to achieve acceptable LOS thresholds. The 20 intersection improvements that follow have been divided into three tiers for phased long term implementation based on need and enhancement to the function of the overall street network. It should be noted that three of the intersections (#7, #16, and #21) are proposed as project features rather than necessitated to improve intersection LOS and the improvements will likely be related to and timed with implementation of streetscape improvements along Third Avenue. The intersection numbers correspond to the intersection numbering system outlined in this report.

Tier 1 Improvements

- Provide a grade-separated intersection at the E Street and H Street trolley crossing locations. This improvement would be considered a regional improvement as the trolley provides service throughout the region. Coordination with MTS/SANDAG will be required for this improvement.
- **#1 Bay Boulevard/I-5 Southbound Ramp/E Street**: Add an eastbound through and right-turn lane, southbound right-turn lane, and northbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- #**2 I-5 Northbound Ramp/E Street**: Add a westbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- **#24 I-5 Southbound Ramp/H Street**: Add a southbound left, eastbound through and right-turn lanes. Coordination with Caltrans will be required for this improvement.
- **#25 I-5 Northbound Ramp/H Street**: Add a westbound through and right-turn lane and restripe south approach to accommodate dual left-turn lanes. Coordination with Caltrans will be required for this improvement.
- **#26 Woodlawn Avenue/H Street**: Change Woodlawn Avenue to a one-way couplet. This improvement is required to serve the intense redevelopment occurring on both sides of H Street. The couplet improvement is not required further north toward E Street.
- **#27 Broadway/H Street**: Add an eastbound transit queue jumper lane and westbound through and right-turn lanes.
- **#28 Fifth Avenue/H Street**: Change the northbound/southbound approaches to include protective plus permissive phasing and add a westbound right-turn lane.
- **#29 Fourth Avenue/H Street**: Add an eastbound/westbound right-turn lane.
- **#44 Fourth Avenue/SR-54 Eastbound Ramp**: Add an eastbound right-turn lane. Coordination with Caltrans will be required for this improvement.

Tier 2 Improvements

- **#34 Broadway/SR-54 Westbound Ramp**: Add a westbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- #**59 J Street/I-5 Northbound Ramp**: Add an eastbound left-turn and westbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- **#61 L Street/Bay Boulevard**: Signalize the intersection, add a southbound left-turn lane, and a northbound right-turn overlap phase to the traffic signal.

- **#63 Bay Boulevard/I-5 Southbound Ramp**: Signalize the intersection. Coordination with Caltrans will be required for this improvement.
- **#64 Industrial Boulevard/I-5 Northbound Ramp**: Signalize the intersection. Coordination with Caltrans will be required for this improvement.
- H Street from four lanes to six lanes from I-5 to Broadway

Tier 3 Improvements

- **#7 Third Avenue/E Street**: Convert the northbound and southbound shared right-through lane into exclusive right-turn lanes.
- **#13 Broadway/F Street**: Add an eastbound right-turn lane.
- **#16 Third Avenue/F Street**: Separate the southbound shared through-right lane into an exclusive through and right-turn lanes, convert the northbound shared through-right lane into an exclusive right-turn lane.
- **#21 Third Avenue/G Street**: Convert the northbound/southbound shared through-right lane into exclusive right-turn lanes.
- #**45 Fourth Avenue/Brisbane Street**: Add a southbound right-turn overlap phase to the traffic signal.
- **#57 Second Avenue/D Street**: Convert to an all-way stop controlled intersection.

In each individual tier, the City's existing monitoring program will determine exactly which projects are implemented first during the biannual CIP program review. In addition to determining timing and need, this systems and operations monitoring approach should also be used to further ascertain final design details of the intersection improvements and may include consideration of the effects on traffic flow as well as the impacts/benefits to other travel modes (e.g. pedestrians and bicycles) that are foundational to the successful implementation of the Specific Plan.

The recommended improvements at the study intersections listed above are shown in **Figure 6-11** and **6-11.1**. It should be noted that the E Street and H Street intersections between the I-5 NB Ramp and Woodlawn Avenue assumes a Light Rail Transit (LRT) grade separation, which would separate vehicular traffic from the trolley. It is recommended that the trolley tracks be grade separated along E and H Streets to improve intersection operations and to accommodate the planned increase in trolley frequency.

Recommendations at intersections 27, 33, and 54 do not improve conditions to an acceptable LOS due to ROW constraints. **Figure 6-12** shows the intersections that have improvements that are considered to be project features or improvements.

Intersection Analysis

Table 6-3 displays the LOS analysis results for the study intersections that have assumed improvements under the Year 2030 With Improvements scenario. As shown in this table, all study intersections could operate at LOS D or better during both peak periods with the proposed improvements, except for the following intersections:

- #27 Broadway/H Street
- #33 Hilltop Drive/H Street
- #54 3rd Avenue/J Street

At the Broadway/H Street intersection (Int. #27), an additional northbound and southbound through lane would be required in order to achieve an acceptable LOS D conditions. However, this improvement would require extensive widening of Broadway and H Street to allow for lane drops. Furthermore, this widening would create longer pedestrian crossings. As such, the recommended improvements of the eastbound queue jumper lane and the additional westbound through and right-turn lanes would improve the intersection from LOS F to LOS E conditions.

At the Hilltop Drive/H Street intersection (Int. #33), no improvements would be recommended due to ROW constraints. The poor LOS at this intersection is primarily caused by the high traffic volumes in the eastbound/westbound movements. Additional through and/or turn lanes would be required in order to improve this intersection to an acceptable LOS. With no improvements, this intersection would remain at LOS E during both peak periods.

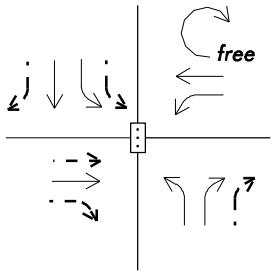
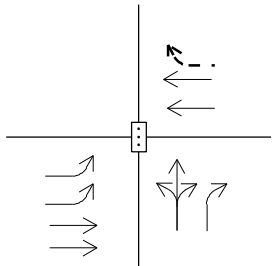
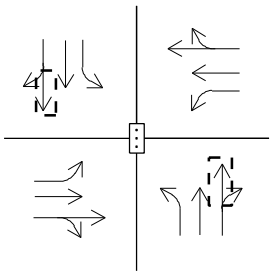
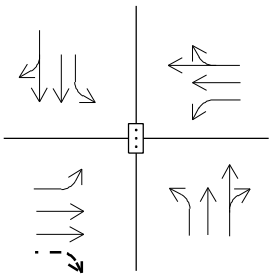
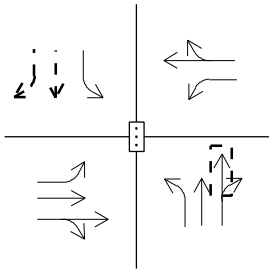
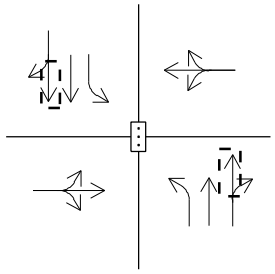
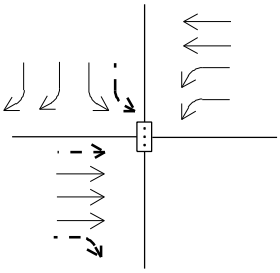
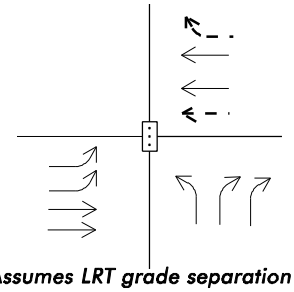
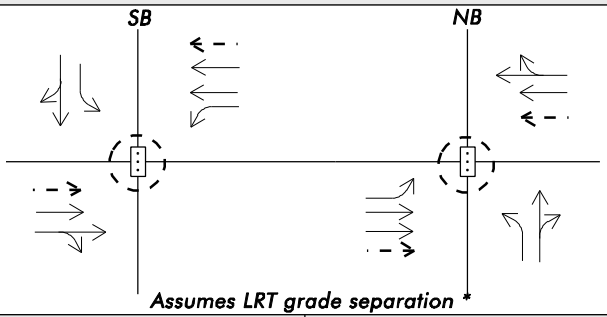
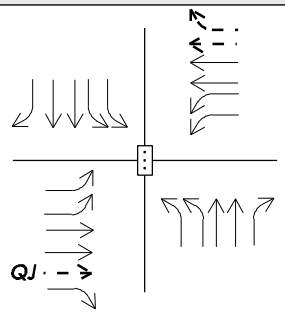
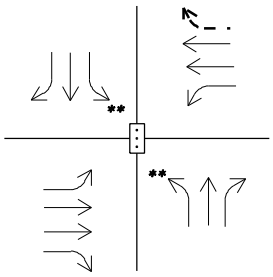
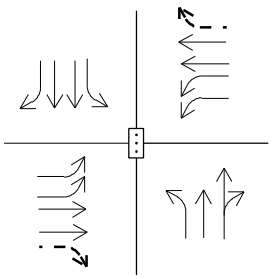
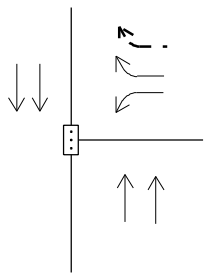
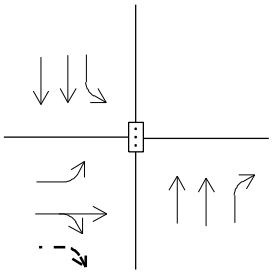
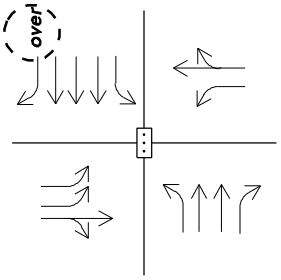
At the 3rd Avenue/J Street intersection (Int. #54), the required improvement of an additional southbound right-turn lane would impact the Henry's Marketplace building, which is built adjacent to the sidewalk. Therefore, this improvement is not recommended. As a result, the LOS would remain at LOS E. However, if the property were to redevelop in the future, additional ROW could be obtained for the southbound right-turn lane.

It should be noted that all of the study intersections along 3rd Avenue would operate at an acceptable LOS without improvements. However, due to the narrowing of 3rd Avenue to create a friendlier pedestrian atmosphere, one of the through lanes along 3rd Avenue in each direction would be converted to an exclusive right-turn lane.

Figure 6-13 shows the locations of these intersections that would still remain at LOS E. **Appendix C** contains the peak-hour intersections LOS calculation worksheets.

West Side Shuttle Service

West Side Shuttle is a concept proposed to serve both the Urban Core Specific Plan and the Bayfront Master Plan areas in western Chula Vista. This service would complement existing and planned future transit improvements. The shuttle would provide localized service between various uses in western Chula Vista and provide connections to the regional transit system. **Figure 6-14** depicts the proposed routing of the West Side Shuttle. The shuttle would provide regional connectivity with stations serving Route 510 at the existing E Street station, Routes 510, 540 (future service), and 627 (future service) at the existing H Street trolley station, and the future station on H Street near Third Avenue serving future Route 627. In addition, five other stations are planned to serve destinations within the Urban Core Specific Plan, along with three additional stations within the Bayfront Master Plan.

1. E St/Bay Blvd -I-5 SB Ramps	2. E St/I-5 NB Ramps	7. E St/3rd Ave	13. F St/Broadway
	 Assumes LRT grade separation *		
16. F St/3rd Ave	**21. G St/3rd Ave**	**24. H St/I-5 SB Ramps**	**25. H St/I-5 NB Ramp**
			 Assumes LRT grade separation *
26. H St/Woodlawn Ave		**27. H St/Broadway**	**28. H St/5th Ave**
 Assumes LRT grade separation *			
29. H St/4th Ave	**34. Broadway/ SR-54 WB Off-Ramp**	**44. 4th Ave/SR-54 EB Ramp**	**45. 4th Ave/Brisbane St**
			

* The Light Rail Transit Crossings on E Street and H Street will have to be grade separated from the vehicular traffic along E Street and H Street.

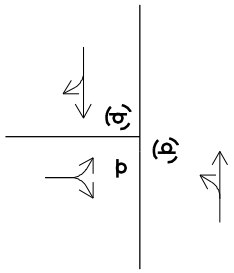
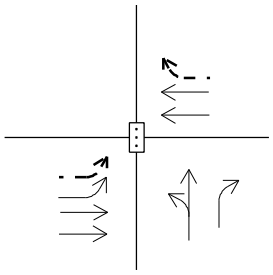
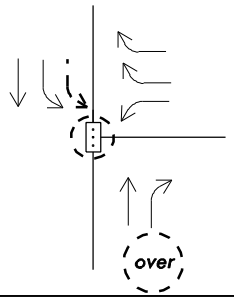
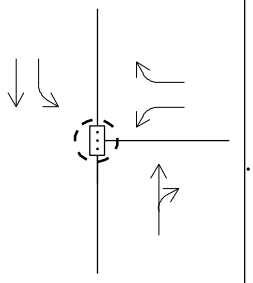
** To improve this intersection the left turn phasing from the indicated movements will be changed to protective + permissive.

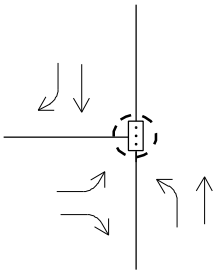
Legend:

- Traffic Signal
- Stop Sign
- Existing lane
- Proposed Improvement
- Lane to be "altered"
- over New Overlap Phase
- QJ Queue Jumper

KIMLEY-HORN and ASSOCIATES

Figure 6-11
Year 2030 with Improvements
Intersections Geometrics

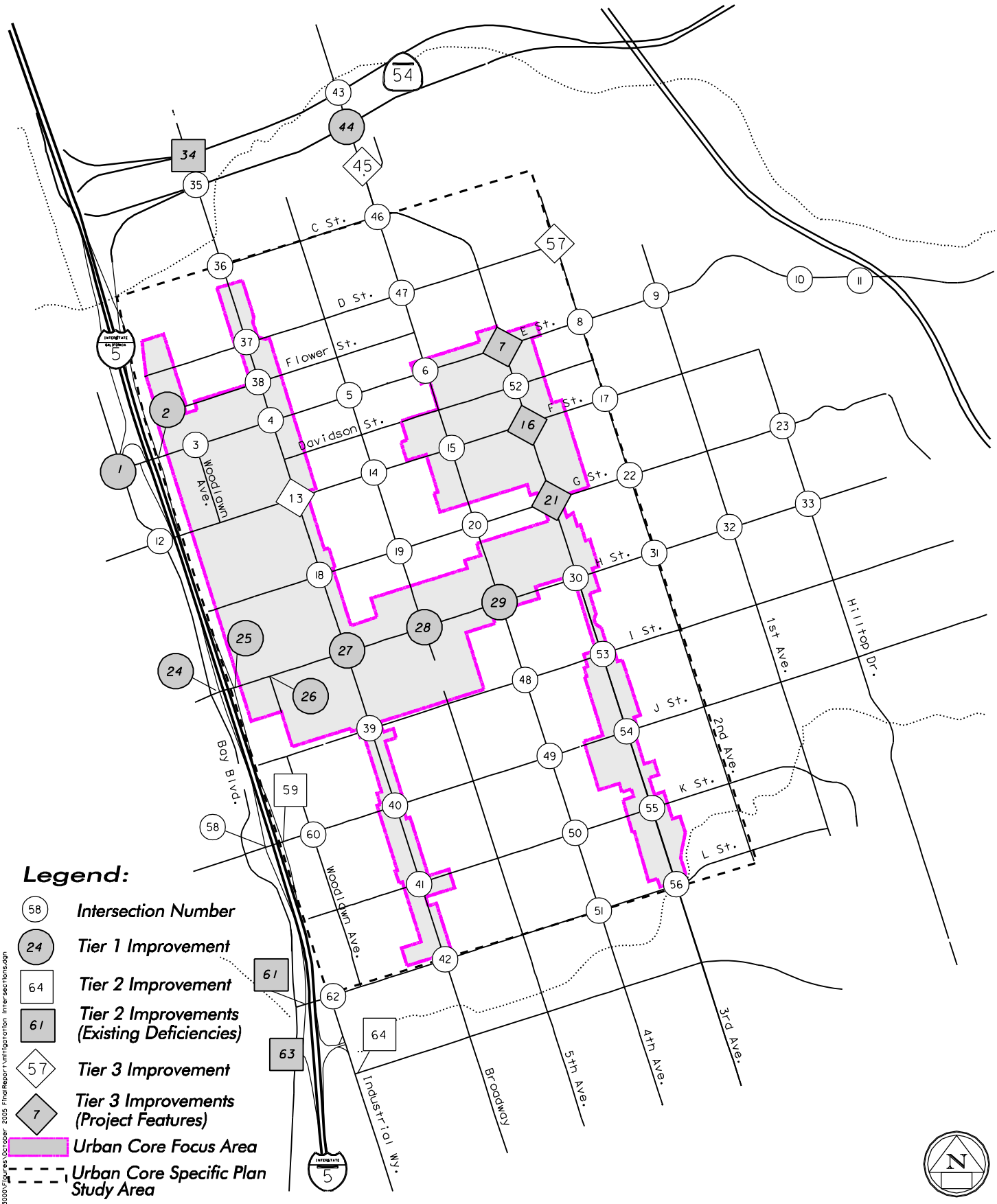
57. 2nd Ave/D St	59. I-5 NB Ramps/J St	61. Bay Blvd/L St	63. Bay Blvd/I-5 SB Ramps
			

64. Industrial Blvd/I-5 NB Ramps


Legend:

- Traffic Signal
- New Traffic Signal
- Existing lane
- Proposed Improvement
- New Overlap Phase
- Lane to be "altered"
- New Stop Sign

Figure 6-11.1
Year 2030 with Improvements
Intersections Geometrics



Legend:

- 58 — Intersection Number
- 24 — Tier 1 Improvement
- 64 — Tier 2 Improvement
- 61 — Tier 2 Improvements (Existing Deficiencies)
- 57 — Tier 3 Improvement
- 7 — Tier 3 Improvements (Project Features)
- Urban Core Focus Area
- Urban Core Specific Plan Study Area

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KIMLEY-HORN and ASSOCIATES

Figure 6-12
Project Features/Improvements at Study Intersection

TABLE 6-3

YEAR 2030 WITH IMPROVEMENTS CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

	INTERSECTION	PEAK HOUR	BEFORE IMPROVEMENTS		AFTER IMPROVEMENTS		PROPOSED IMPROVEMENTS (c)
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	
1	Bay Blvd-I-5 SB Ramp @ E St (f)	AM	**58.4**	**E**	25.5	C	Add EBT, EBR, SBL, SBR and NBR lanes.
		PM	**302.9**	**F**	37.2	D	
2	I-5 NB Ramp @ E St (f)	AM	**60.5**	**E**	26.1	C	Add WBR lane.
		PM	31.9	C	20.6	C	
7	3rd Ave @ E St (d)	AM	12.9	B	21.5	C	Convert NBT shared RT lane and SBT shared RT lane into exclusive RT lanes.
		PM	24.8	C	25.7	C	
13	Broadway @ F St	AM	17.7	B	20.0	B	Add EBR lane.
		PM	**66.1**	**E**	39.7	D	
16	3rd Ave @ F St (d)	AM	15.9	B	20.4	C	Separate SBT shared RT lane into an exclusive SBR lane and a SBT lane; Convert the NBT shared RT lane into an exclusive NBR lane.
		PM	23.5	C	23.2	C	
21	3rd Ave @ G St (d)	AM	11.8	B	10.3	B	Convert NBT shared RT lane and SBT shared RT lane into exclusive RT lanes.
		PM	10.5	B	15.2	B	
24	I-5 SB Ramp @ H St (f)	AM	36.7	D	21.5	C	Add SBL, EBT, and EBR lanes.
		PM	**84.5**	**F**	27.1	C	
25	I-5 NB Ramp @ H St (f)	AM	47.6	D	23.1	C	Add WBR, WBT, and restripe south approach to accommodate dual left turns.
		PM	**138.4**	**F**	31.7	C	
26	Woodlawn Ave @ H St (e)	AM	33.7	C	32.2/13.3 (e)	C/B (e)	Change Woodlawn Ave. to a one way couplet.
		PM	**260.6**	**F**	22.2/28.8 (e)	C/C (e)	
27	Broadway @ H St	AM	42.7	D	36.4	D	Add EBT Queue Jumper Lane, WBT and WBR lanes
		PM	**118.1**	**F**	**77.0**	**E**	
28	5th Ave @ H St	AM	15.2	B	19.1	B	Change NB and SB approaches to protective + permissive phasing and add WBR lane.
		PM	**61.6**	**E**	52.0	D	
29	4th Ave @ H St	AM	38.6	D	30.3	C	Add EBR and WBR lanes.
		PM	**59.4**	**E**	40.2	D	
33	Hilltop Dr @ H St	AM	**58.3**	**E**	**58.3**	**E**	Do nothing due to ROW Constraints.
		PM	**74.2**	**E**	**74.2**	**E**	

Notes:

Bold values indicate intersections operating at LOS E or F.

EBL=Eastbound left turn lane; EBT=Eastbound through lane; EBR=Eastbound right turn lane; NBL=Northbound left turn lane; NBT=Northbound through lane; NBR=Northbound right turn lane; WBL=Westbound left turn lane; WBT=Westbound through lane; WBR=Westbound right turn lane; SBL=Southbound left turn lane; SBT=Southbound through lane; SBR=Southbound right turn lane.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

(c) See figures 6-21 to 6-21.1 for the proposed improvements at the study intersections.

(d) Change in travel lanes is due to narrowing of 3rd Avenue.

(e) The Woodlawn Avenue couplet creates 2 new intersections. The first number/letter corresponds to the delay/LOS at the west intersection and the second number/letter corresponds to the delay/LOS at the east intersection.

(f) Coordination with Caltrans will be required for the proposed improvement at this intersection.

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TABLE 6-3

YEAR 2030 WITH IMPROVEMENTS CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	BEFORE IMPROVEMENTS		AFTER IMPROVEMENTS		PROPOSED IMPROVEMENTS (c)
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	
34	Broadway @ SR-54 WB Ramp (f)	AM	**190.6**	**F**	45.2	D	Add WBR lane
		PM	16.2	B	14.8	B	
44	4th Ave @ SR-54 EB Ramp (f)	AM	37.2	D	22.6	C	Add EBR lane.
		PM	**95.2**	**F**	25.2	C	
45	4th Ave @ Brisbane St	AM	25.8	C	24.2	C	Add SBR overlap phase.
		PM	**61.5**	**E**	50.1	D	
54	3rd Ave @ J St	AM	22.9	C	22.9	C	Do Nothing due to impacts on Henry's Building.
		PM	**74.5**	**E**	**74.5**	**E**	
57	2nd Ave @ D St	AM	31.2	D	27.0	D	Convert to an all-way stop control intersection.
		PM	36.0	**E**	18.6	C	
59	J St @ I-5 NB Ramp (f)	AM	**135.2**	**F**	28.3	C	Add EBL and WBR lanes.
		PM	**61.7**	**E**	24.1	C	
61	L St @ Bay Blvd	AM	22.7	C	18.1	B	Add SBL lane, signalize intersection, and add NBR overlap phasing.
		PM	**203.0**	**F**	17.1	B	
63	Bay Blvd @ I-5 SB Ramp (f)	AM	**84.0**	**F**	17.7	B	Signalize intersection.
		PM	**221.2**	**F**	46.9	D	
64	Industrial Blvd @ I-5 NB Ramp (f)	AM	26.0	D	12.6	B	Signalize intersection.
		PM	**66.5**	**F**	20.8	C	

Notes:

Bold values indicate intersections operating at LOS E or F.

ECL= Exceeds calculable limit . At intersections at or over capacity, the calculated delay value becomes unreliable.

EBL=Eastbound left turn lane; EBT=Eastbound through lane; EBR=Eastbound right turn lane; NBL=Northbound left turn lane; NBT=Northbound through lane; NBR=Northbound right turn lane; WBL=Westbound left turn lane; WBT=Westbound through lane; WBR=Westbound right turn lane; SBL=Southbound left turn lane; SBT=Southbound through lane; SBR=Southbound right turn lane.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

(c) See figures 6-21 to 6-21.1 for the proposed improvements at the study intersections.

(d) Change in travel lanes is due to narrowing of 3rd Avenue.

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(f) Coordination with Caltrans will be required for the proposed improvement at this intersection.

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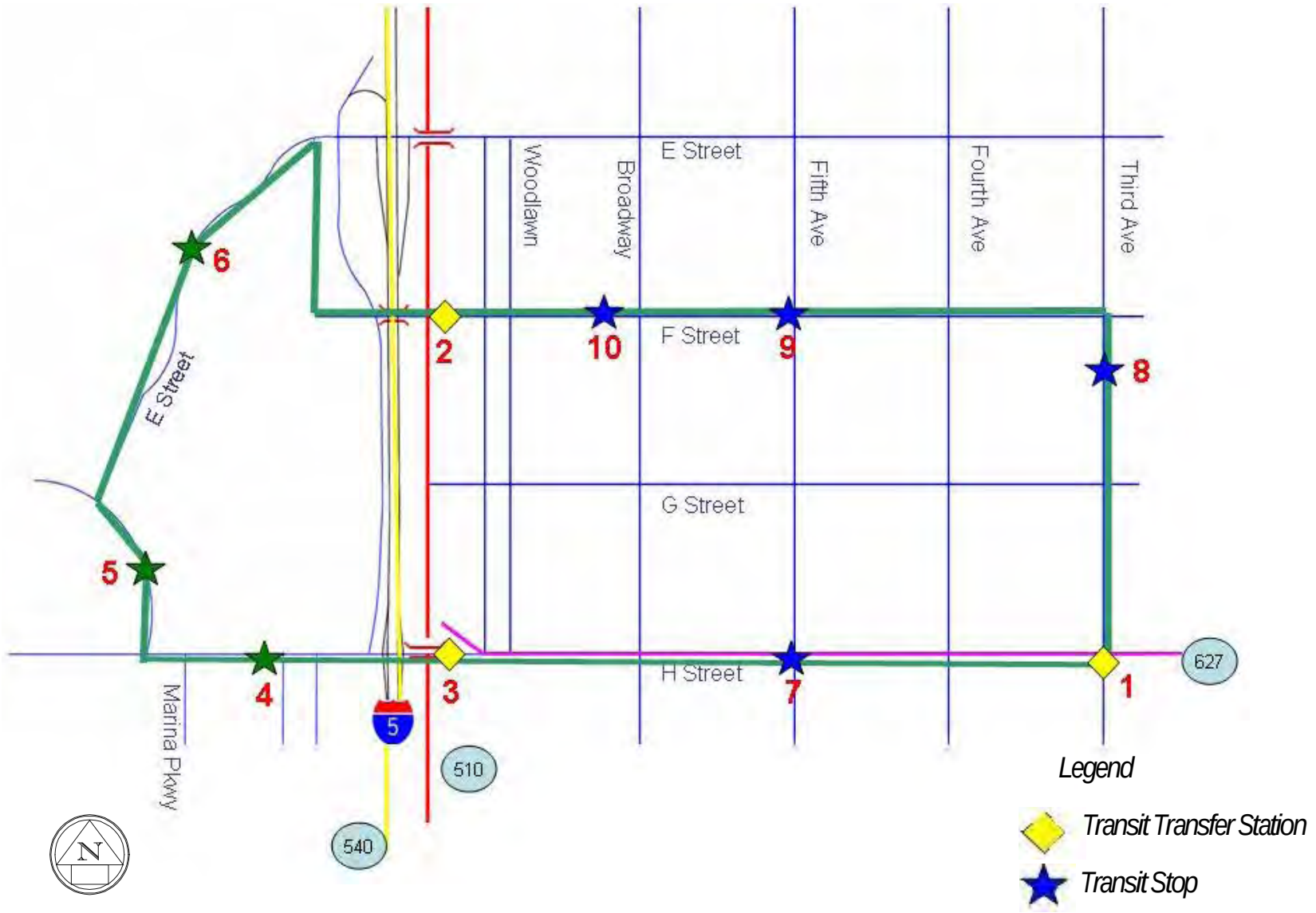
Figure 6-13
Study Intersections Remaining LOS E



Kimley-Horn and Associates, Inc.

Figure 6-14
West Side Shuttle Proposed Route

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7.0 FINDINGS AND CONCLUSIONS

The following section provides a summary of the key findings and study recommendations.

- The Urban Core Specific Plan (UCSP) focus area is located east of I-5, west of Del Mar Avenue, north of L Street, and south of C Street.
- Approximately 331,000 ADT is expected with the full build-out of the Urban Core, which is an increase of 141,000 ADT over existing conditions.
- A total of 64 intersections and 32 roadway segments were identified for analysis.
- Under existing conditions, three intersections operate at LOS E or worse during the peak periods and all roadway segments function at an acceptable LOS.
- Under Year 2030 conditions, 20 intersections operate at LOS E or worse during the peak periods and all but two roadway segment functions at an acceptable LOS.
- Recommended improvements were made along nine roadway segments within the study area, which include E Street, F Street, H Street, Woodlawn Avenue, and several segments along Broadway and 3rd Avenue.
- With the recommended improvements, the segment of H Street between I-5 and Broadway would function at an acceptable LOS, but the segment of 3rd Avenue between E Street and G Street would function at LOS F.
- The 3rd Avenue corridor intersections would operate at acceptable levels of service and the narrowing of 3rd Avenue and increasing the width of the sidewalks would create a friendlier pedestrian atmosphere.
- Recommended improvements were made at the 20 intersections that would operate at LOS E or worse during the peak periods and at locations where improvements to the road network would also affect the intersections at either end of the segment.
- Three of the 20 intersections (#7, #16, and #21) are proposed as project features rather than necessitated to improve intersection LOS and the improvements will likely be related to and timed with implementation of streetscape improvements along Third Avenue.

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Appendix C. Market Analysis

DRAFT

September 2006

C | Appendix

CITY OF CHULA VISTA URBAN CORE SPECIFIC PLAN MARKET ANALYSIS

Submitted to:
THE CITY OF CHULA VISTA

Prepared by:
Economics Research Associates

June 2, 2005

ERA Project No. 15362

GENERAL LIMITING CONDITIONS

This study is based on estimates, general knowledge of the industry and consultations with the client and the client's representatives. No responsibility is assumed for inaccuracies in reporting by the client, the client's agent and representatives or any other data source used in preparing or presenting this study. Research was conducted from April 2004 through July 2004, and Economics Research Associates has not undertaken any update of its research effort since such date. No warranty or representation is made by Economics Research Associates that any of the projected values or results contained in this study will actually be achieved. This report is not to be used in conjunction with any public or private offering of securities or other similar purpose where it may be relied upon to any degree by any person other than the client without first obtaining the prior written consent of Economics Research Associates. This study may not be used for purposes other than that for which it is prepared. This study is qualified in its entirety by, and should be considered in light of, these limitations, conditions, and considerations.

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I. Introduction and Summary Findings

Introduction

The City of Chula Vista retained Economics Research Associates (ERA), under subcontract with RRM Associates, to review the market for infill development and redevelopment as input to the Chula Vista Urban Core Specific Plan. Exhibit I-1 shows the Study Area, which is bordered by Freeway I-5 to the West, Palm Oaks Street to the East, C Street to the North, and L Street to the South.

The purpose of this report is to describe the regional economic and demographic context in which development will take place, review the current real estate market for commercial and housing development; assess the Urban Core's strengths, weaknesses, opportunities, and threats for development; and estimate support for the long-term development in the Urban Core.

Summary Findings

Regional Economic Context

The strong and relatively secure regional economic environment provides an excellent context in which to undertake future development in the Urban Core. The shortage of affordable market rate housing presents an opportunity for the Urban Core to increase its housing stock and find a ready market.

Regionally, residential development is the dominant land use in terms of aggregate value among the classes of new development. A strategy to transform the Urban Core sooner rather than later should fundamentally be based on opportunities for new residential development.

Urban Core's Economic Position

Redevelopment, infill development, and revitalization of existing development will take place within a growing and dynamic market, though one that is increasingly less affordable. The region's diversified economy provides stability, while projected shifts in regional growth patterns towards South County will generate new opportunities for the Urban Core if development there is priced competitively. The Urban Core's location between two growing economic hubs – Downtown San Diego and Tijuana -- is well positioned within coastal South County for capturing a significant share of regional growth.

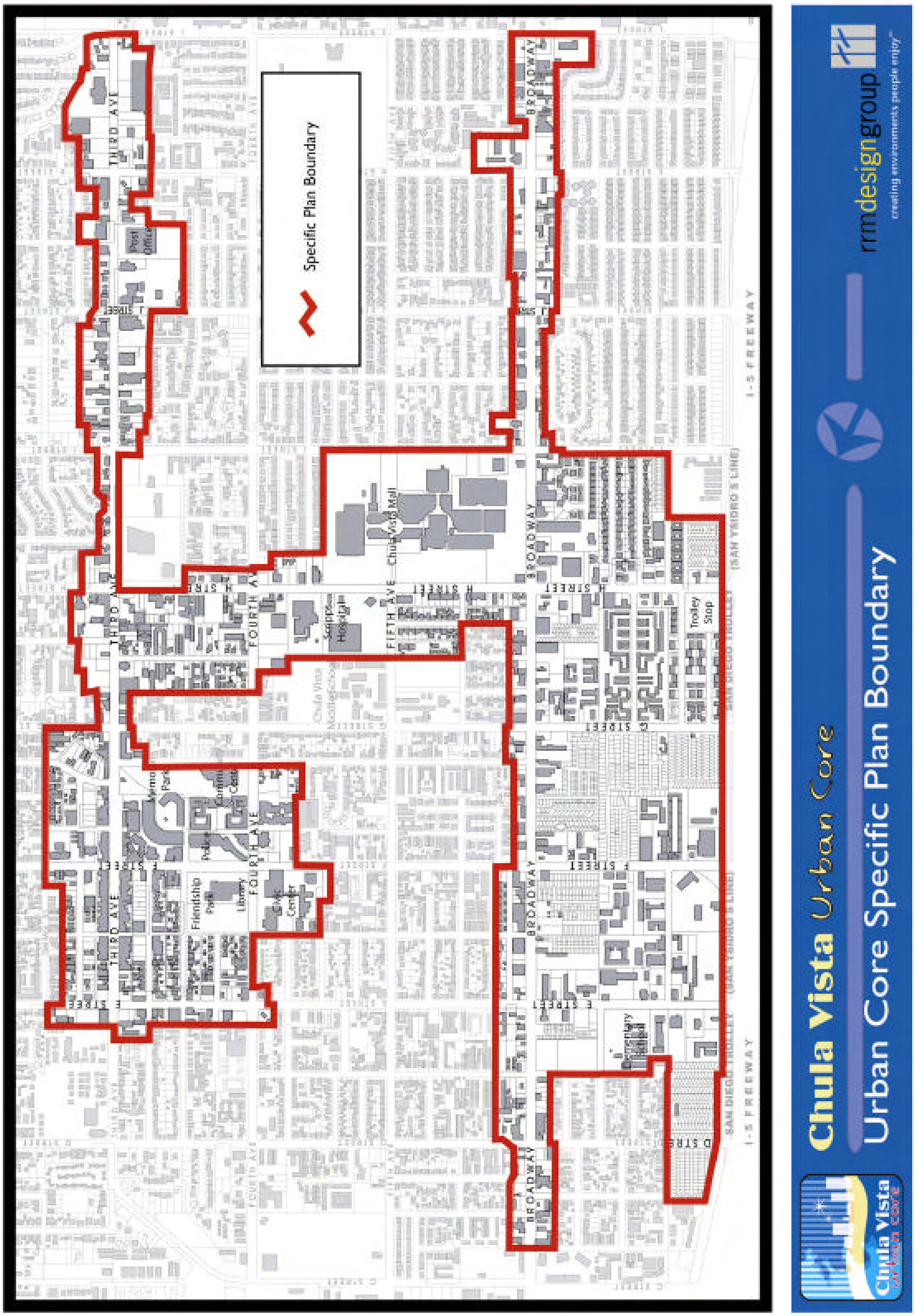


Exhibit I-1 Study Area

While Chula Vista has been growing along with the region, western Chula Vista's 8,000 additional jobs projected between 2000 and 2030 is a declining share of citywide job growth. Existing SANDAG forecasts indicate that western Chula Vista, which includes the Urban Core, may continue to see a declining share of sub-regional growth as new development continues in eastern Chula Vista and elsewhere in South County. Despite its declining share of citywide employment, western Chula Vista's (SRA-21) 44,800 jobs forecasted by 2030 will still remain a majority share of citywide employment (56 percent in 2030 compared to 68 percent in 2000). Some of the projected declining share of future job growth reflects existing land use policies and the build-out nature of western Chula Vista, compared to other, newer areas of South County. Policies in the Urban Core and elsewhere in western Chula Vista, such as the Bayfront, that expand development capacity could change these assumptions, particularly if the development and community characteristics are of a competitive quality.

Chula Vista's taxable sales per capita are approximately 9 percent lower than the countywide average, which reflects net leakage of retail sales and Chula Vista's lack of tourism sales. Still, taxable sales grew by 3.7 percent per year between 1997 and 2002. The Urban Core can play a role in recapturing some sales that are lost to other jurisdictions. The Urban Core traditionally has been an important retail area for Chula Vista and South Bay residents, and consumers from Mexico; however, its share of citywide sales, though still large, is falling except for apparel and food stores in recent years, as new retail centers are developed in eastern Chula Vista.

Retail development and revitalization will be an important component of the Urban Core's future. The Urban Core's share of citywide apparel sales is rising. Apparel sales may have increased its market share due growth in cross border trade that is important to Chula Vista Center, growth in the South Bay regional population, and the limited amount of fashion stores included in the new developments in eastern Chula Vista (though this will change when the new regional mall planned in Otay Ranch is developed). While the Urban Core's retail outlets will benefit from the growing consumer base in South Bay, the Urban Core's traditional commercial role will have to adjust to growing competition, including eastern Chula Vista, the border communities (especially for Mexican trade), and downtown San Diego (for entertainment and dining), by finding new niches and serving more focused geographic areas. The Urban Core's market share of regional sales will probably decline as new competition develops, but absolute sales and supportable space will expand as the market population, particularly in western Chula Vista, grows.

While the Urban Core has visitor-serving uses, such as motels, and is along a major tourist travel corridor along the I-5 to Mexico, it currently is not very competitive in the regional tourism market. Its current minor niche is lodging for the budget traveler. Chula Vista's Bayfront is key for penetrating the region's visitor market, especially the traveler market to Mexico. The Urban Core's opportunity to improve its share of the visitor market would be enhanced with a strong link to the Bayfront. If the Urban Core is to attract visitors to the region on its own, it will have

to develop a unique niche, probably centered on culture, music, and food, and as an affordable location with amenities for the business market. Still, regional competition is great, and tourism will probably be a minor component of the Urban Core's economy.

The Urban Core, with the Bayfront, does have the opportunity to leverage the Mexican market to expand the reasons Mexicans shop in Chula Vista, from staples, fashion, and services, to dining and entertainment, particularly for families. There are many links between residents in South Bay and Tijuana, such as business, family, and friends, and the Urban Core can position itself as one of the primary areas within the border zone region where cross border business networking and personal gatherings can occur. The importance of the Mexican market to Chula Vista, however, should diminish somewhat, though remain significant, as the resident consumer base in the South Bay market area grows and opportunities diversify.

Demographics

SANDAG forecasts relatively lesser population and household growth, a largely aging population, a more diversified Hispanic and multicultural population, and relatively lower incomes and education levels in western Chula Vista and the Urban Core compared to countywide averages. These characteristics have implications for housing affordability and consumer buying power and preferences.

SANDAG's forecasts, however, reflect existing trends and capacities associated with current General Plan land use policies. Since SANDAG forecasts significant growth in South Bay that will change South Bay's demographic characteristics, the opportunity exists for the Urban Core to reinvent itself by changing land use policy to accommodate a greater share of South Bay and countywide growth, and modify its projected demographic characteristics in the process. The natural aging of the existing population in the Urban Core, particularly in single-family housing neighborhoods where properties overtime will turnover to new households, may also change the Urban Core's demographic profile over the next couple of decades.

While the opportunity exists to diversify the Urban Core's demographic trends, it should be recognized that most of the Urban Core's and western Chula Vista's demographic characteristics is already in place, associated with existing housing, and that these characteristics will continue to have influence even as the Urban Core diversifies with new development.

Many of the demographic trends are regional. The average age of the population is rising, as the baby-boom generation ages, and housing and districts that appeal to an aging population will be important. Environments that appeal to a multi-cultural population will be important. Housing that is affordable will be important.

The Real Estate Market

The real estate market indicators are strong for the residential and retail sectors, with rising prices and low vacancy rates countywide and within the Urban Core. Though rising, commercial retail monthly rents ($1.00 to $2.60 NNN per s.f.) and apartment rental rates ($0.61 to $1.29 NNN per s.f.) in the Urban Core are below average, reflecting its older building stock. Occupancy rates are very high, indicating strong demand at existing price points. It would be difficult to support new development at commercial retail and apartment rental rates associated with the Urban Core's older building stock. New development will have to achieve rents that are higher than average for the Urban Core. Limited recent examples demonstrate that this is possible, such as the Chula Vista Gateway mixed-use project, with retail in the first story and office space above. While there has been little new housing development in the Urban Core, several projects are proposed, which demonstrate that developers believe they can command rents and prices that are higher than existing market rents and prices for older properties.

Examples of new ownership housing are limited; however, the resale price of existing single-family homes ($468,000 in April, 2004) and condominiums ($350,000 in April, 2004) are growing and healthy, and only moderately lower than the countywide average. The relative affordability of housing in the Urban Core provides a near to mid-term advantage and market opportunity.

While the office sector countywide has moderately higher vacancy rates than other types of income property, office space in the Urban Core has low occupancy rates. Monthly rents in the Urban Core for most properties ($1.65 to$1.85 NNN) are lower than average, reflecting the older nature of most existing office buildings. The higher rents ($2.50 to $2.75 NNN) and strong occupancy rates achieved at the Gateway project, however, indicate that quality new office developments can generate relatively high rental income. Whether these values were achieved due to pent-up demand from a market that had not seen new Class A office development in decades, or reflect a developing and sustainable office sub-market remains to be seen.

The lodging inventory in the Urban Core, which is comprised of older properties, is positioned for the budget traveler. The low rents and occupancy rates, and declining transient occupancy taxes (TOT) revenues indicate that lodging is the weakest of the land uses that the Urban Core may potentially develop. While South Bay at some point may support a business hotel, Chula Vista's Bayfront or the Eastern Urban Center may be better positioned.

Commercial and residential land prices in the Urban Core ($47 to $63 per s.f. for commercial and $20 per s.f. for residential), though high for Chula Vista, are low relative to downtown San Diego, and present an opportunity to capture development, particularly urban housing development, that use to be feasible in downtown San Diego, but are no longer feasible given

downtown San Diego's land prices. Compared to eastern Chula Vista, however, the Urban Core achieves lower rents, but higher land prices, which makes it financially difficult to develop a financially feasible project. Future densities in the urban core probably have to be higher than existing densities to achieve enough revenue per acre to cover land costs. How developers provide parking affordably while increasing densities, while keeping rents and prices in line with the market, will be an important challenge.

Long-Term Development Parameters

Office Development

It is estimated that the Urban Core may reasonably expect to absorb approximately 750,000 to 1.1 million square feet of office space by 2030, in addition to existing supply, under the Moderate to High scenarios. The potential amount demanded would be less under a Low scenario, but planning policy should not unduly constrain potential upside growth if the more optimistic scenarios materialize.

Retail Development

The Urban Core has access to several potential consumer markets, including local and out-of-area households, downtown area employees, overnight visitors and cross border shoppers.

It is estimated that the Urban Core could support approximately 2.3 million square feet of gross leasable retail space, including existing retail space within the Urban Core, such as Chula Vista Shopping Center, 3rd Avenue, E Street, H Street, and Broadway. This amount could be higher if household and population capacity is enhanced, and average incomes rise with new development.

Housing Development

It is reasonable to assume that build-out capacity in the South Suburban MSA will increase, which would result in greater growth in the sub-market than SANDAG currently forecasts past the year 2020. Chula Vista is contemplating such increases as it updates its General Plan, including within the Eastern Urban Center, Downtown, and the upland portions of the Bayfront. The City of San Diego is considering adding housing capacity to the Otay Mesa Community Plan. San Ysidro and National City redevelopment efforts contemplate new urban housing capacity. While most of these changes in policies that will increase housing capacity have not yet been approved, it is likely that some will be approved given the regional housing affordability issue.

Assuming that household growth in the South Suburban MSA continues between 2020-2030 at the same rate as SANDAG forecasts for the 2010-2020 period, and that the Urban Core can

capture a significant share of this growth, the Urban Core might accommodate over 1,500 to over 3,600 new housing units between 2000 and 2030, including potentially small-lot single-family homes and attached town homes, and multi-family ownership and rental properties at various densities and heights.

Lodging

Lodging prospects are limited due to the lack of a major generator for overnight tourism demand, and the competitive advantage of lodging planned on Chula Vista's Bayfront. Waterfront hotels have traditionally performed better than the general lodging market due to the popularity of ocean views and bay access. Lodging within the Urban Core will probably have to position itself for the economy class, or a lower price point than planned at the Chula Vista Bayfront, and target travelers along Interstate 5 heading to and from Baja California, business travelers, and visiting families and friends.

Financial Considerations

The amount of revenue a property can generate relative to increases in costs must be greater to induce private redevelopment and renovation, without public subsidies. Rents and home prices, and densities, will have to be greater to generate this additional revenue.

How parking is addressed, in terms of standards (such as reducing standards near transit or allowing shared parking standards for mixed-use development), location (forming parking districts that can pool parking in-lieu fees to provide serviceable off-site parking at a lower cost due to economies of scale), and type (ensuring parking development costs are commensurate with achievable rents) is important.

Another major issue that will affect feasibility is the ultimate impact fee costs, given the potentially higher cost of providing public facilities in an existing community to serve the additional population.

If the Urban Core Plan's allowable densities requires subterranean parking, rents and home prices per square foot will have to be even greater to afford the high cost of subterranean parking. A Keyser Marston Associates (KMA) study for the City of Chula Vista that tested the residual value of alternative forms of housing at different densities and assumed impacts concluded that townhomes and mid-rise condominium development currently are the most feasible housing prototype, supporting current estimates of acquisition costs for improved properties in western Chula Vista. The feasibility of high-rise condominium development appeared low because of the higher costs relative to prices, although a relatively modest increase in high-rise price

assumptions (which the Chula Vista Urban Core could evolve into) would make high-rise development feasible. KMA concluded that rental rates currently are too low to support increases in land values and construction costs.

Building upon KMA's analysis and using similar impact fee factors, ERA evaluated three hypothetical mixed-use housing and retail scenarios on 50,000 square foot lots, and applied the draft development standards prepared by RRM Associates. The first two scenarios were variations of mixed-use development within the V-2 Village area. The first scenario, V-2-A, assumes that development maximizes the allowed floor-area ratio (FAR), necessitating subterranean parking. The second scenario, V-2-B, assumes that only one level of lower cost tuck-under parking (half level below grade and half above grade, utilizing natural ventilation) is developed and the number of residential units is limited by the parking supply. Both of these scenarios assume that commercial parking requirements is satisfied off-site through parking in-lieu fees. The third scenario, V-12, assumes a high-rise, transit-oriented, mixed-use development were all parking is placed on site. Theses analyses are presented in Appendix A.

The estimated residual land values that these scenarios may support are as follows:

Scenario	**Residual Land Value Per S.F. of Land Area**
V-2A: FAR Capacity	$21
V-2B: Parking Constrained	$71
UC-12: Transit-Oriented High-Rise	$22

While these prices are comparable for higher density residential and commercial land in the urban areas of South Bay, only the Parking Constrained scenario generates sufficient value to recover the cost of property acquisition that includes land and existing improvements, which is the more common scenario within the Urban Core. The reason the Parking Constrained scenario performs better is that the high cost of subterranean parking is avoided. The UC-12 scenario, the Transit-Oriented High Rise Scenario, must compensate for higher construction costs per unit associated with high-rise development, which reduces residual value given market prices.

Based on this analysis, the City should strive to improve the feasibility of private redevelopment by doing the following:

- Strive to reduce the impact fee cost burden on development through efficient infrastructure planning, and the use of public funds (such as redevelopment funds) to cover some of the costs of infrastructure and public facility provision;

- Reduce parking in-lieu fees by developing district parking as a public/private partnership, and/or base fees on the provision of common surface lots, rather than structured parking.

These measures are particularly important in the early phases of the Urban Core's redevelopment. Overtime, as prices and rents rise in real terms relative to construction costs, the residual land value of development will rise and the ability for private parties to purchase existing properties, without subsidy will improve, as will development's capacity to absorb higher parking and impact fee costs.

The Urban Core's Competitive Strengths, Weaknesses, Opportunities & Threats

Development prospects within the Urban Core have many competitive strengths and opportunities, but also some competitive weaknesses to overcome and potential threats to avoid and prepare against.

Strengths

- Location between downtown San Diego and Tijuana
- Established retail market concentration
- Proximity to the Bay and potential view development
- Established employment, retail, and residential center with high occupancy
- Public investment in infrastructure
- Quality entry-level and mid-market rate ownership housing
- Transit linkages and good regional highway access
- Traditional downtown district

Weaknesses

- Relatively lower incomes
- Limited visitor industry
- Low hotel room rates and occupancy rates
- Aging building stock
- Relatively lower rents that discourage investment
- Public facility deficiencies
- Relatively neutral regional market image
- Relatively weak linkage with the Bayfront

Opportunities

- Affordable development relative to downtown San Diego
- Ability to capture a larger share of housing demand than SANDAG forecasts
- An alternative and more affordable urban lifestyle than downtown San Diego
- Coastal view development and links to the Bayfront
- Pedestrian and transit-oriented development
- Ability to intercept Mexican consumers
- Become South County's office employment, retail, and entertainment center
- Become a meeting place for San Diego/Mexico business and personal networks
- Housing for many incomes, preferences, and cultures

Threats

- Competition from other mixed-use urban nodes in the region
- Competition from Bayfront development if not linked with core
- Competition from the Eastern Urban Center if not adequately distinguished
- Cost and complexity of land assembly and infill development
- Infrastructure and public facility constraints and mitigation costs
- Not overcoming a "second tier" reputation in the regional market
- Exposure to Mexican currency fluctuations

Concentrating efforts in keystone districts within the Urban Core to show success and generate some critical mass, rather than dilute efforts with individual scattered developments, may be important for generating momentum and long-term success, so that people choose to live, shop, and work in the Urban Core because of its own distinct identity.

II. Market Context

Regional Economic Base

San Diego has a strong and diversified regional economy. The major contributors to the economy (as measured by contribution to the Gross Regional Product) are manufacturing, the military, tourism, business and technology services, and trade. This diversity provides both stability and an entrepreneurial spirit exemplified by the region's many small businesses.

According to the San Diego Regional Chamber of Commerce, San Diego County's gross regional product[1] (GRP) grew dramatically in real terms (adjusted for inflation) from 1980 to 1990. The economy faced a structural change as the Cold War ended and the defense industry, in particular the aerospace industry, contracted. This structural change combined with a national recession stagnated and even decreased the GRP in the early 1990s. The economy rebounded slowly up to 1995. Since then, the economy's growth has accelerated until the early 2000s, and has continued to grow at a slower rate in the early 2000s. The period from 1997 to 2000 registered the most impressive growth, as shown in Exhibit II-1.

Population has grown with the economy's growth, fueled by foreign and national migration and the natural increase of the base population. San Diego County's population grew by almost 494,000 people between 1990 and 2003, from 2.5 million to 3.0 million, for an average compounded annual growth rate of 1.4 percent. Due to the recession experienced during the first years of the 1990's decade, the real gross regional product per capita, adjusted for inflation, experienced negative annual growth rates between 1991 and 1993, grew 0.7 percent in 1994 and increased steadily thereafter, reaching 6.9 percent in 1999 and 8.0 percent in 2000.

During the period between 2000 and 2003, the San Diego Region added more than 173,400 new residents, increasing its population by 6.1 percent. Due to the growth in population, the real gross regional product per capita, adjusted for inflation, experienced more modest annual growth rates in 2001 (0.6 percent), 2002 (0.3 percent) and 2003 (1.4 percent), compared to much higher GRP growth rates per capita from 1996 to 2000.

The tragic events of 9/11, 2001 have resulted in an increase in spending for military and defense, which has reinvigorated these traditional San Diego industries. In 2002, the region had more than 105,000 Active Duty Personnel and 24,000 Department of Defense civilian jobs. Defense

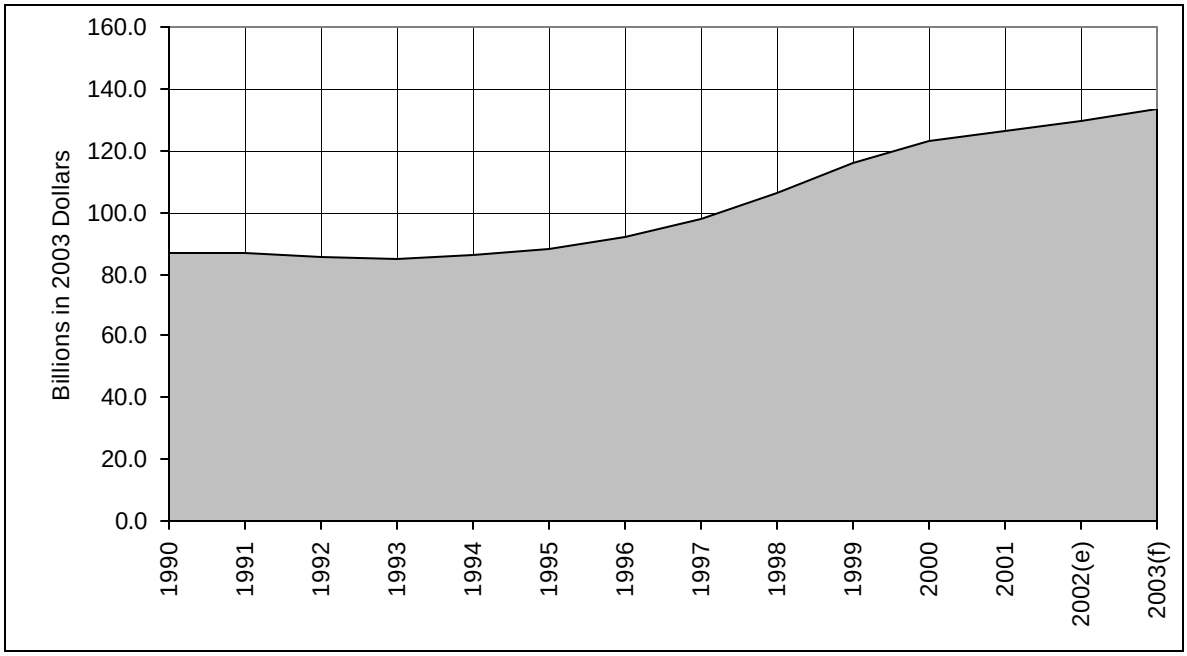
[1] This measure is the regional version of the Gross Domestic Product, or GDP, which is a measure of total economic output.

expenditures in the region increased by $3.2 billion in 2002, a 30 percent increase from Department of Defense expenditures in 2001,

While the military and defense industries are important to the region, businesses, universities, and institutes in San Diego County developed strong technical industries in the later 1980s and 1990s, such as biotechnology (the region is the third largest biotech cluster in the United States), telecommunications, software, medical instruments, electronics, etc. Trade has grown, first with the maquiladora program, then NAFTA. Tourism remains strong.

Today, the region's economic base is more diverse than it has ever been and is better prepared to face future economic downturns, thereby lessening the region's reliance on the defense industry and federal expenditures, the contraction of which greatly affected the economy during the 1990's recession.

Exhibit II-1 San Diego County Real Gross Regional Product



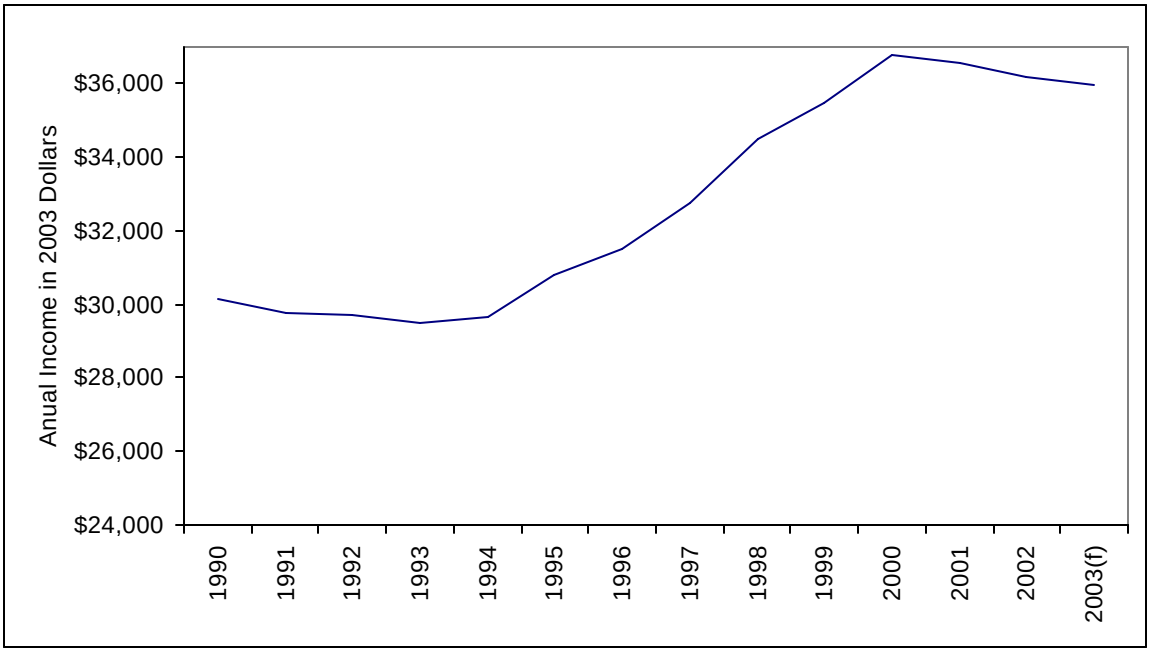
Source: San Diego Regional Chamber of Commerce.
San Diego Economic Bulletin, Forecast 2003, Volume 51, Number 1.

In 2003, 1.43 million people were employed on average in San Diego County throughout the year and the unemployment rate stood at 4.4 percent. Although the unemployment rate has increased from the 3.4 percent in 2001, San Diego has performed better than the state of California, which

recorded an unemployment rate of 6.5 percent[2] in 2003. It should be mentioned that the recent increase in the unemployment rate is partly due to people moving to the region, attracted to the strong economy, and not the result of a weak job generation. In 2002, more than 10,000[3] jobs were added to the local economy, contrasting with the 125,000[4] jobs lost in the State of California as a whole. San Diego's rate of 4.4 percent is at or near the generally accepted "full employment" threshold.

San Diego County's personal income per capita, in real terms adjusted for inflation, increased substantially during the 1980's, but declined during the first half of the 1990's as a result of the recession. Recovery started in 1994 and per capita income topped in 2000, but has decreased slightly in recent years, as illustrated in Exhibit II-2.

Exhibit II-2 San Diego County Real per Capita Income



Source: San Diego Regional Chamber of Commerce.

Perhaps the greatest contributor to price inflation in the region is the cost of housing. San Diego County has become one of the least affordable housing markets in the country. Following the 1990's recession, home prices have increased every year since 1996. Adjusted for inflation, the

[2] San Diego Regional Chamber of Commerce, 2003 Economic Outlook

[3] San Diego Regional Chamber of Commerce, 2002 Year in Review, Volume 51, Number 3

[4] idem

average home value in the county has increased 76.4[5] percent since 1995, for a compound annual growth rate of 7.3 percent, well above the annual inflation rate. Such increases are the result of various economic factors, such as stable economic growth, high migration rates that increase the demand for housing, scarcity of land and housing supply, and historically low interest rates.

Affordability has become a major concern for the region's economy, as the proportion of local households that can afford a home has dramatically decreased in the last 10 years. During the 1994 recession, the proportion of households who could afford the median price home was 48 percent; today, only 16 percent of households can afford the median price home in San Diego County[6].

The future bodes well for the region's economy due to its diversity, federal expenditures, proximity to Mexico, qualified workforce, and amenities and destinations that attract tourists. Defense will continue to be an important part of the region's economy for the foreseeable future. Technology companies will also drive growth for the region. The tourism industry is expected to attract more visitors in years to come. San Diego County's proximity to large short-haul markets, such as Southern California, Northern California, Arizona and other western states shelter the region's tourism economy somewhat from potential disruptions to national and international travel. The region's economy has also benefited from NAFTA related trade given its strategic geographic location. Since its inception in 1994, the total dollar volume of international trade has more than tripled in the region.

The strong and relatively secure economic environment provides an excellent context in which to undertake future development in the Urban Core. The shortage of affordable market rate housing presents an opportunity for the Urban Core to increase its housing stock and find a ready market.

Development Trends

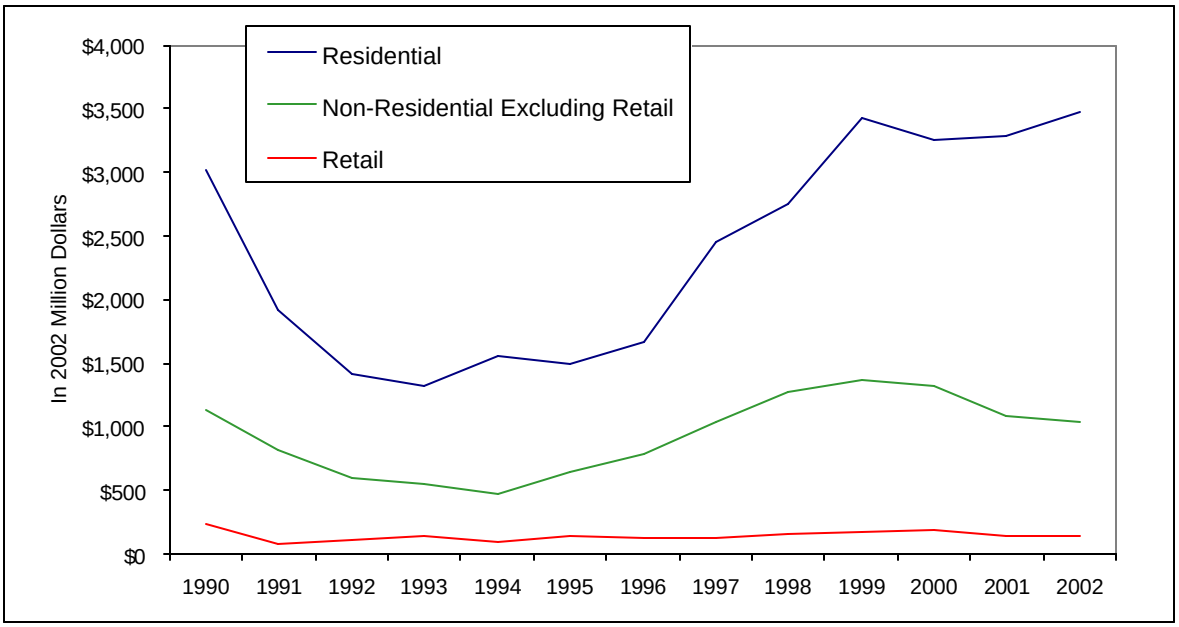
Exhibit II-3 shows San Diego County development trends measured by permit valuation (in 2002 dollars) for residential development, non-residential development excluding retail, and retail development. Residential permit value averaged $2.4 billion from 1990 to 2002 in constant 2002 dollars, reaching $3.5 billion in 2002. Non-residential permit value, excluding retail permits, averaged $0.9 billion from 1990 to 2002 in constant 2002 dollars, reaching $1.0 billion in 2002. Retail permit value averaged $145 million from 1990 to 2002 in constant 2002 dollars, reaching $138 million in 2002.

[5] San Diego Regional Chamber of Commerce, Economics Research Associates

[6] San Diego Regional Chamber of Commerce, San Diego Economic Bulletin

Exhibit II-4 shows development trends in the City of Chula Vista measured by permit valuation (in 2002 dollars) for residential development, non-residential development excluding retail, and retail development. Residential permit value averaged $288 million from 1990 to 2003 in constant 2002 dollars, reaching $606 million in 2003. Non-residential permit value, excluding retail permits, averaged $29 million from 1990 to 2003 in constant 2002 dollars, reaching $50 million in 2000. Retail permit value averaged $23 million from 1990 to 2003 in constant 2002 dollars, reaching $53 million in 2003.

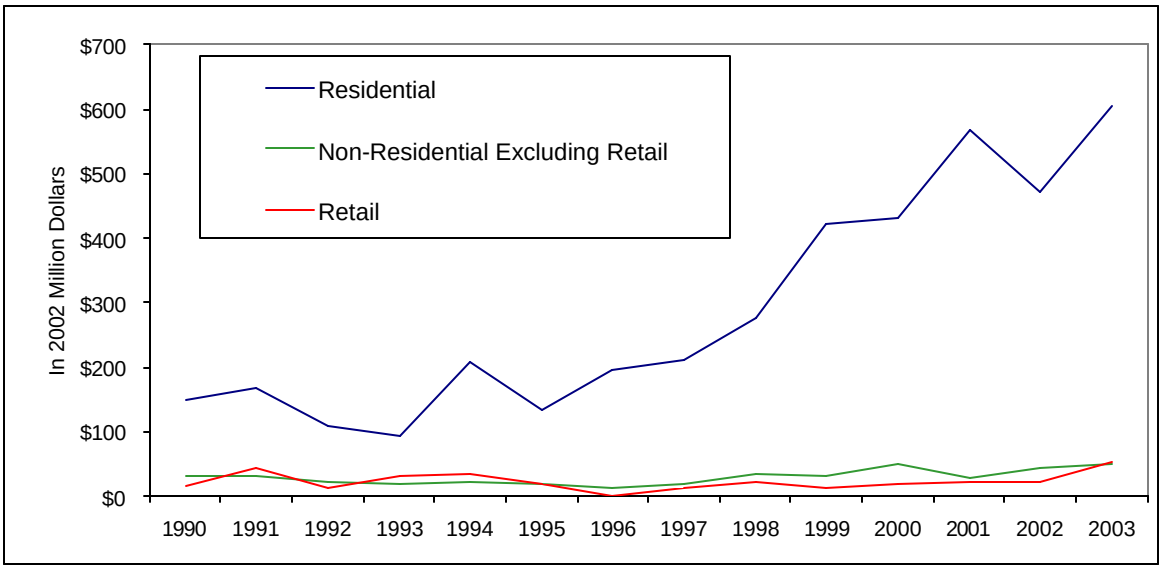
Exhibit II-3 Countywide Development Permit Value



Source: San Diego Regional Chamber of Commerce

Regionally, residential development is by far the dominant land use in terms of aggregate value among the classes of new development. A strategy to transform the Urban Core sooner rather than later should fundamentally be based on opportunities for new residential development.

Exhibit II-4 Chula Vista Development Permit Value



Source: San Diego Regional Chamber of Commerce

Employment Trends

San Diego County

According to SANDAG, the San Diego Region is expected to increase its workforce from 1.38 million to 1.82 million between 2000 and 2030, for a compounded annual growth rate (CAGR) of 0.9 percent. Employment growth projections for the San Diego Region are evenly distributed throughout the 30-year term; it is estimated, on average, that 146,000 jobs will be added to the local economy every ten years. Table II-1 shows forecasted employment growth by industry for San Diego County between 2000 and 2030.

The Financial, Insurance and Real Estate (FIRE) sector is projected to grow by 54 percent during the 30-year period, adding 37,715 new jobs, while the Services sector is forecasted to grow by 50 percent, adding 201,295 jobs to the regional economy. These sectors are particularly important for the private office market. Retail trade, another important sector for downtown development, is expected to add almost 67,000 new jobs.

Table II-1 San Diego County Employment Growth by Industry 2000-2030

	2000	2010	% Change	2020	% Change	2030	% Change
Agriculture	11,800	10,648	-9.76%	9,897	-7.05%	9,782	-1.16%
Construction	70,000	78,655	12.36%	79,396	0.94%	78,621	-0.98%
Finance, Insurance & Real Estate	69,501	81,759	17.64%	95,641	16.98%	107,216	12.10%
Government	206,600	240,239	16.28%	257,928	7.36%	273,174	5.91%
Manufacturing	129,200	116,562	-9.78%	116,822	0.22%	118,494	1.43%
Military	90,093	90,093	0.00%	90,093	0.00%	90,093	0.00%
Retail trade	217,100	239,456	10.30%	260,113	8.63%	283,899	9.14%
Self employment, domestic workers	89,380	98,305	9.99%	108,281	10.15%	118,673	9.60%
Services	399,202	461,117	15.51%	529,159	14.76%	600,497	13.48%
Transportation, Comm. & P.Utilities	50,800	55,880	10.00%	60,683	8.60%	69,128	13.92%
Wholesale trade	51,000	55,808	9.43%	64,870	16.24%	74,453	14.77%
Total	1,384,676	1,528,522	**10.39%**	1,672,883	**9.44%**	1,824,030	**9.04%**

Source: SANDAG and Economics Research Associates

South Suburban Market Area

Employment growth in the South Suburban Major Statistical Area (MSA), where western Chula Vista and the Urban Core are located, is expected to increase from 85,900 to 167,300 between 2000 and 2030, adding more than 81,000 jobs for a compounded annual growth rate (CAGR) of 2.2 percent, well above the regional average. Table II-2 shows employment growth by industry for the South Suburban Major Statistical Area in San Diego County between 2000 and 2030.

In the South Suburban Area, the FIRE sector is projected to increase by 204 percent during the 30-year period, adding 6,900 new jobs, while the Services sector is forecasted to grow by 242 percent, adding 35,689 new jobs to the South Bay economy.

Table II-3 shows the South Suburban MSA's projected share of San Diego County's net growth in employment between 2000 and 2030 for FIRE, Government, Retail Trade, Government, and Services sectors, important sectors for the Urban Core. As shown, South Suburban MSA's share of regional growth for all categories is projected to increase each subsequent decade. According to SANDAG's estimates, the South Suburban Area may increase its share of total employment in San Diego County from 6.2 percent in 2000 to 9.2 percent by 2030.

Table II-2 South Suburban Employment Growth by Industry 2000-2030

	2000	2010	% Change	2020	% Change	2030	% Change
Agriculture	251	253	0.8%	257	1.6%	258	0.4%
Construction	1,905	2,153	13.0%	2,174	1.0%	2,491	14.6%
Finance, Insurance & Real Estate	3,369	4,515	34.0%	7,391	63.7%	10,269	38.9%
Government	19,312	23,251	20.4%	26,426	13.7%	29,338	11.0%
Manufacturing	9,998	9,046	-9.5%	9,080	0.4%	9,355	3.0%
Military	200	200	0.00%	200	0.00%	200	0.0%
Retail trade	17,927	20,446	14.1%	23,839	16.6%	28,370	19.0%
Self employment, domestic workers	10,660	12,463	16.9%	14,989	20.3%	17,410	16.2%
Services	14,737	20,929	42.0%	33,661	60.8%	50,426	49.8%
Transportation, Comm. & P.Utilities	3,433	4,612	34.3%	5,972	29.5%	8,790	47.2
Wholesale trade	4,112	5,272	28.2%	7,587	43.9%	10,346	36.4%
Total	85,904	103,140	**20.1%**	131,576	**27.6%**	167,253	**27.1%**

Source: SANDAG; and Economics Research Associates

Table II-3 South Suburban Net Growth Employment Share of San Diego County between 2000 and 2030 for FIRE, Government, Retail Trade and Services Sectors

	2000-2010	2010-2020	2020-2030
Finance, Insurance & Real Estate	9.3%	20.7%	24.9%
Government	11.7%	17.9%	19.1%
Retail trade	11.3%	16.4%	19.0%
Services	10.0%	18.7%	23.5%

Source: SANDAG and Economics Research Associates

Chula Vista

In the case of Chula Vista, SANDAG forecasts that jobs will increase from 53,700 to 79,400 between 2000 and 2030, for a CAGR of 1.3 percent, which is less than the South Suburban growth rate, but still above the countywide average growth rate. SANDAG is forecasting that a higher proportion of South Bay job growth will occur elsewhere, such as Otay Mesa. The City of Chula Vista is expected to receive 6,074 new jobs between 2000 and 2010, 9,086 between 2010 and 2020, and 10,551 between 2020 and 2030. Table II-4 shows SANDAG's forecasted employment growth by industry for the City of Chula Vista between 2000 and 2030.

The FIRE sector in Chula Vista is projected to increase by 107 percent, adding 2,451 jobs between 2000 and 2030, while the Services sector is forecasted to grow 88 percent, adding 10,314 jobs to the city's employment base during the 30-year period.

These forecasts are based on existing land use policy. If land-use policy changes to allow for more or less employment, the forecasted share of regional employment growth occurring in Chula Vista may also change.

Table II-4 Chula Vista Employment Growth by Industry 2000-2030

	2000	2010	% Change	2020	% Change	2030	% Change
Agriculture	165	165	0.0%	165	0.0%	165	0.0%
Construction	1,378	1,558	13.1%	1,567	0.6%	1,672	6.7%
Finance, Insurance & Real Estate	2,290	2,777	21.3%	3,819	37.5%	4,741	24.1%
Government	8,814	10,788	22.4%	11,707	8.5%	12,644	8.00%
Manufacturing	6,051	5,357	-11.5%	5,363	0.1%	5,477	2.1%
Military	0	0		0		0	
Retail trade	11,794	12,500	6.0%	13,530	8.2%	15,142	11.9%
Self employment, domestic workers	7,633	8,734	14.4%	10,102	15.7%	11,191	10.8%
Services	11,727	13,533	15.4%	17,419	28.7%	22,041	26.5%
Transportation, Comm. & P.Utilities	1,810	2,055	13.5%	2,366	15.1%	2,914	23.2%
Wholesale trade	2,069	2,338	13.0%	2,853	22.0%	3,455	21.1%
Total	53,731	59,805	**11.3%**	68,891	**15.2%**	79,442	**15.3%**

Source: SANDAG and Economics Research Associates

Table II-5 shows Chula Vista's forecasted share of South Suburban MSA's net employment growth between 2000 and 2030 for FIRE, Government, Retail Trade and Services sectors. As shown in the table, Chula Vista's share of FIRE category net growth is forecasted to decrease from 42.5 percent between 2000 and 2010 to 32.0 percent between 2020 and 2030, while its share of Government's net growth is forecasted to decrease from 50.1 percent to 32.2 percent during the same timeframe. Chula Vista's share for Retail Trade's net growth is forecasted to increase from 28.0 percent to 35.6 percent and decrease slightly in the services sector.

The South Suburban MSA is forecasted to add over 81,300 new jobs between 2000 and 2030. During the same timeframe, the City of Chula Vista is projected to add over 25,700 new jobs. According to SANDAG's forecasts, the City of Chula Vista is forecasted to capture 31.6 percent of the total employment growth in the South Suburban Area during the 30-year period.

Table II-5 Chula Vista Net Growth Employment Share of South Suburban between 2000 and 2030 for FIRE, Government, Retail Trade and Services Sectors

	2000-2010	2010-2020	2020-2030
Finance, Insurance & Real Estate	42.5%	36.2%	32.0%
Government	50.1%	28.9%	32.2%
Retail trade	28.0%	30.4%	35.6%
Services	29.2%	30.5%	27.6%

Source: SANDAG and Economics Research Associates

Even though the City of Chula Vista is projected to add more than 25,700 new jobs between 2000 and 2030, its share of the total employment growth within the South Suburban Area is expected to decrease from 62.5 percent in 2000 to 47.5 percent by 2030. Chula Vista's declining shares are expected because of growth in other areas in the South Suburban MSA, particularly Otay Mesa, which would decrease Chula Vista's existing shares. Again, if land use policies change in Chula Vista to allow more or less growth, the city's projected share of South Suburban growth may also change.

SRA-21 (Western Chula Vista)

The Urban Core comprises approximately 20-25 percent of SANDAG's Sub-Regional Area 21 (SRA-21) land, the smallest geographic area for which SANDAG reports employment by sector. SRA-21 generally comprises western Chula Vista. SANDAG forecasts that jobs in SRA-21 will increase from 36,800 to 44,800 between 2000 and 2030, adding almost 8,000 new jobs to the local economy for a 0.7 percent compounded annual growth rate (CAGR). The CAGR for SRA-21 is significantly lower than the 1.3 percent CAGR forecasted for the City of Chula Vista, which in turn is lower than the 2.2 percent CAGR for the South Suburban Area, and reflects that SRA-21 is closer to build-out under existing General Plan policies. Again, changes in land use policy would influence these projections.

SRA-21 is forecasted to capture 31 percent of the total employment growth in the City of Chula Vista during the 30-year period. Table II-6 shows employment growth by industry for SRA-21 between 2000 and 2030.

Within SRA-21, the FIRE industry sector is projected to increase 36.0 percent during the 30-year period, adding 518 jobs, while the Services sector is forecasted to grow by 37.9 percent, adding 3,067 jobs. The Retail Trade sector is projected to increase 19.8 percent, adding 1,682 jobs.

Table II-6 SRA-21 Employment Growth by Industry 2000-2030

	2000	2010	% Change	2020	% Change	2030	% Change
Agriculture	160	160	0.0%	160	0.0%	160	0.0%
Construction	959	1,042	8.7%	1,046	0.4%	1,124	7.5%
Finance, Insurance & Real Estate	1,436	1,595	11.1%	1,685	5.6%	1,954	16.0%
Government	6,312	7,503	18.9%	7,729	3.0%	8,329	7.8%
Manufacturing	5,042	4,418	-12.4%	4,421	0.1%	4,519	2.2%
Military	0	0		0		0	
Retail trade	8,487	8,858	4.4%	9,158	3.4%	10,169	11.0%
Self employment, domestic workers	3,569	3,678	3.1%	3,789	3.0%	4,162	9.8%
Services	8,092	8,888	9.8%	9,332	5.0%	11,159	19.6%
Transportation, Comm. & P.Utilities	1,059	1,065	0.6%	1,084	1.8%	1,257	16.0%
Wholesale trade	1,673	1,678	0.3%	1,731	3.2%	1,944	12.3%
Total	36,789	38,885	**5.7%**	40,135	**3.2%**	44,777	**11.6%**

Source: SANDAG and Economics Research Associates

Table II-7 shows SRA-21's share of Chula Vista's net growth between 2000 and 2030 for FIRE, Government, Retail Trade and Services sectors. SRA-21's is projected to account for 32.6 percent of Chula Vista's FIRE net growth between 2000 and 2010, decrease to 8.6 percent between 2010 and 2020, and increase to 29.2 percent between 2020 and 2030. SRA-21's share of Chula Vista's Government net growth share follows a similar pattern, accounting for 60.3 percent of total forecasted Chula Vista net growth between 2000 and 2010, decreasing to 24.6 percent between 2010 and 2020, and increasing again to 64.0 percent between 2020 and 2030. Retail trade and Services follow similar patterns as well.

Presumably, this fluctuation in market share that SANDAG is forecasting anticipates that western Chula Vista will capture a large share this decade, but will lose market share to eastern Chula Vista, particularly the Eastern Urban Center, during the next decade, and regain some market share the following decade as the EUC approaches build-out.

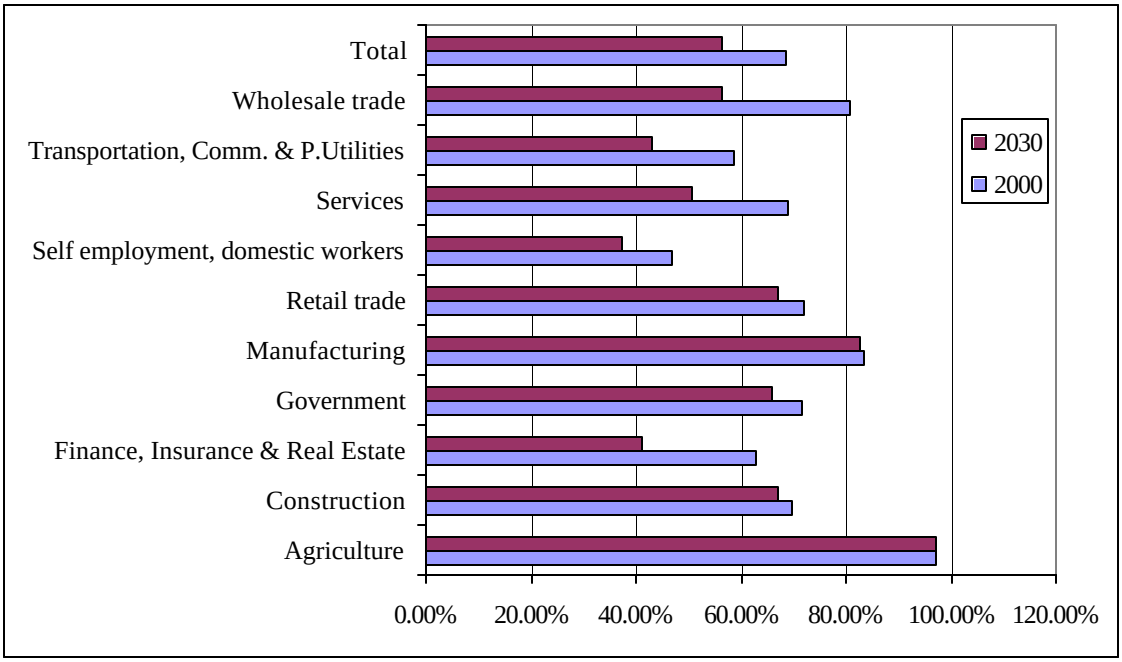
SRA-21's share of total employment in Chula Vista is expected to decrease from 68.4 percent in 2000 to 56.3 percent by 2030, attributable to the development of new employment centers within the City of Chula Vista (particularly in eastern Chula Vista). Exhibit II-5 shows SRA-21's projected share of citywide employment by industry sector from 2000 and 2030.

Table II-7 SRA-21 Job Growth As a Share of Chula Vista's Job Growth between 2000 and 2030 for FIRE, Government, Retail Trade and Services Sectors

	2000-2010	2010-2020	2020-2030
Finance, Insurance & Real Estate	32.6%	8.6%	29.2%
Government	60.3%	24.6%	64.0%
Retail trade	52.5%	29.1%	62.7%
Services	44.1%	11.4%	39.5%

Source: SANDAG and Economics Research Associates

Exhibit II-5 SRA-21 Share of Chula Vista Employment by Industry Sector for 2000 and 2030



Source: SANDAG; and Economics Research Associates

Implications for the Urban Core

Redevelopment, infill development, and revitalization of existing development will take place within a growing and dynamic market, though increasingly less affordable. The region's diversified economy provides stability, while projected shifts in regional growth patterns towards South County will generate new opportunities for the Urban Core if it is priced competitively. The Urban Core's location between two growing economic hubs –Downtown San Diego and

Tijuana -- is well positioned within coastal South County for capturing a significant share of regional growth.

While Chula Vista has been growing along with the region, western Chula Vista's share of the city's job and retail growth has been declining. Existing SANDAG forecasts indicate that western Chula Vista, which includes the Urban Core, may continue to see a declining share of sub-regional growth as new development continues in eastern Chula Vista and elsewhere in South County, though western Chula Vista's share of total jobs (new and existing) will still remain significant. Some of the projected declining share of future job growth reflects existing land use policies and the build-out nature of western Chula Vista, compared to other, newer areas of South County. Policies in the Urban Core and elsewhere in western Chula Vista, such as the Bayfront, that expand development capacity could change these assumptions, particularly if the development and the community characteristics are of a competitive quality.

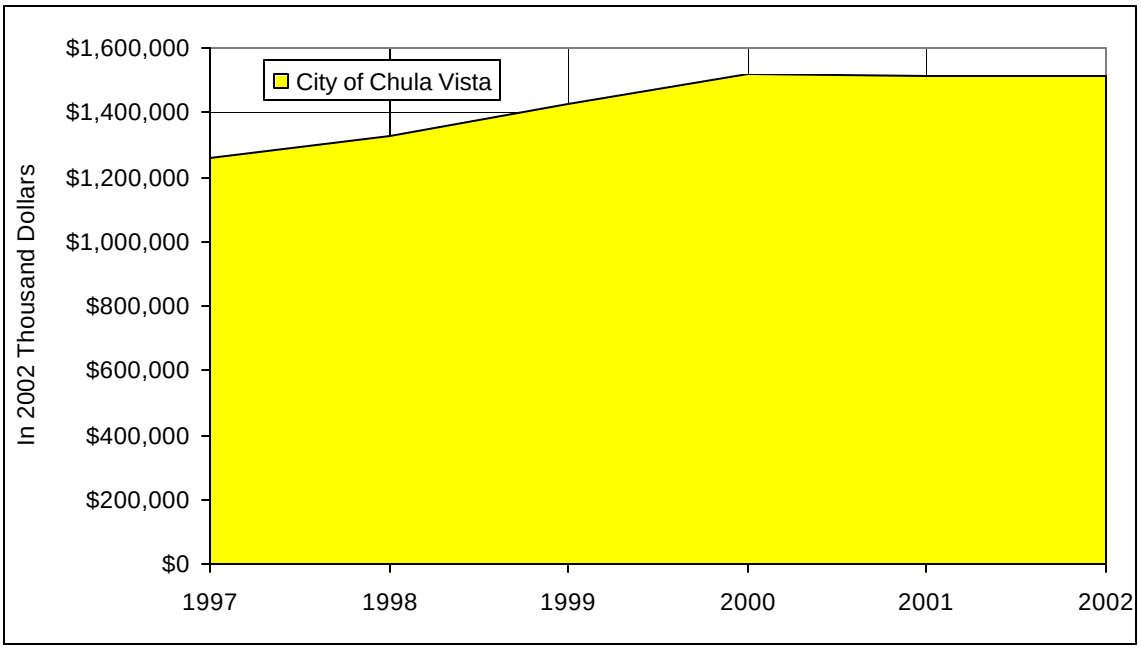
Retail Trends

Retail Sales

Taxable retail sales in the City of Chula Vista has grown in real terms adjusted for inflation from 1997 to 2002. As shown in Exhibit II-6, City of Chula Vista taxable retail sales (in 2002 constant dollars) increased from $1.3 billion in 1997 to $1.5 billion in 2000, for a 6.4 percent average compounded annual growth rate. Taxable retail sales in Chula Vista slightly decreased in 2001 and 2002. Between 1997 and 2002, the average compounded annual growth rate of taxable retail sales was 3.7 percent.

Chula Vista's taxable retail sales per capita in 2002 was $7,913, 18.5 percent lower than the countywide average of $9,378. This may be attributable to the time delay associated with developing new commercial development to serve the growing population in eastern Chula Vista. Chula Vista's relatively lower penetration of the regional tourism market may also be a factor, though this is countered by Chula Vista's higher than average share of sales to the Mexican market.

Exhibit II-6 City of Chula Vista Taxable Retail Sales Trends



Source: State Board of Equalization

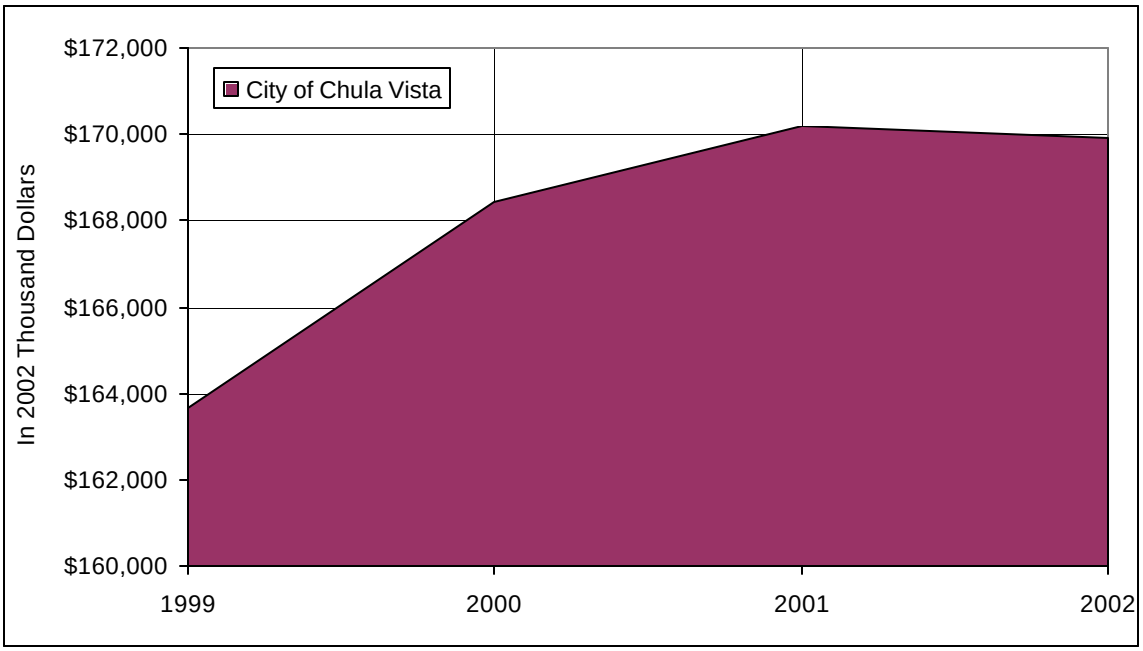
Restaurants are potentially an important part of the Urban Core's future retail offerings, especially if the Urban Core is to become a regional destination for eastern Chula Vista and other South County residents. In 2002, eating and drinking places represented 11.2 percent of all taxable retail sales in the City of Chula Vista, lower than the 12.8 percent they represent in San Diego County, and the 12.6 percent they represent in the State of California. Exhibit II-7 shows taxable sales for eating and drinking places in 2002 dollars for the City of Chula Vista.

The Urban Core Retail Sales

Table II-8 shows taxable sales by category in the Urban Core for 1995, 2000 and 2003 and CAGR. The Urban Core includes commercial corridors along E Street, H Street, Broadway Avenue and 3rd Avenue.

Table II-9 shows taxable sales by category in the Urban Core as a percentage of Chula Vista for 1995 and 2000. The categories that showed an increasing share of citywide sales were apparel and food stores. The Urban Core's share of all other categories decreased between 1995 and 2000.

Exhibit II-7 City of Chula Vista Eating and Drinking Taxable Retail Sales Trends



Source: State Board of Equalization

Table II-8 1995 and 2000 Urban Core Taxable Sales

	1995	2000	CAGR (1995-2000)	2003	CAGR (2000-2003)
Apparel Stores	28,529,500	44,729,800	9%	47,028,300	2%
General Merchandise Stores	86,778,000	146,005,800	11%	150,855,200	1%
Food Stores	26,154,700	34,415,100	6%	37,706,800	3%
Eating & Drinking Places	48,673,800	55,208,500	3%	68,240,900	7%
Building Materials & Farm Implements	7,023,900	5,376,200	-5%	6,323,400	6%
Auto Dealers & Auto Supplies	21,978,400	32,606,000	8%	38,179,300	5%
Service Stations	32,509,200	33,191,000	0%	35,184,700	2%
Other Retail Stores	41,069,900	67,158,100	10%	84,827,900	8%
All Other Categories	29,067,400	33,191,000	3%	35,116,400	2%
Total	**321,784,800**	**451,881,500**		**503,462,900**	

Source: City of Chula Vista and ERA

Table II-9 1995 and 2000 Urban Core Percentage of Citywide Taxable Sales

	1995	2000
Apparel Stores	51.9%	67.2%
General Merchandise Stores	33.4%	29.5%
Food Stores	37.2%	38.0%
Eating & Drinking Places	41.2%	35.5%
Building Materials & Farm Implements	12.0%	5.3%
Auto Dealers & Auto Supplies	25.5%	22.3%
Service Stations	32.7%	27.4%
Other Retail Stores	42.9%	42.7%
All Other Categories	21.4%	16.0%

Source: California Board of Equalization, City of Chula Vista and ERA

Retail Space

In 2003, retail sales in the county supported 48.1 million square feet of retail space (in buildings 50,000 square feet or greater), compared to 35.3 million in 1993, for an average annual increase of 1.3 million square feet and an average compounded annual growth rate of 3.1 percent. According to CB Richard Ellis, vacancy rates for retail space are at the lowest levels in 10 years (2.7 percent at the end of 2003); in marked contrast to 1993 when vacancy rates stood at 8.7 percent. During 2003, the region absorbed 1.5 million square feet of new retail space.

In the 3rd quarter of 2003, the Chula Vista/Bonita retail market had 2.7 million square feet (in buildings 50,000 square feet or greater) and vacancy rates much lower than the county average, at 0.60 percent, reflecting an under-served local market. Of the 1.7 million square feet under construction in San Diego County during the 3rd quarter of 2003, the Chula Vista/Bonita retail market accounted for 380,000 square feet, or 22.4 percent.

Implications for the Urban Core

The Urban Core traditionally has been an important retail area for Chula Vista and South Bay residents, and consumers from Mexico. Retail development and revitalization will be an important component of the Urban Core's future. While the Urban Core's retail outlets will benefit from the growing consumer base in South Bay, the Urban Core's traditional commercial role will have to adjust to growing competition in South Bay, including eastern Chula Vista, the border communities (especially for Mexican trade), and downtown San Diego (for entertainment

and dining), by finding new niches and serving more focused geographic areas. The Urban Core's market share of regional sales will probably decline as new competition develops, but absolute sales and supportable space will expand as the market population, particularly in western Chula Vista, grows.

Visitor Market

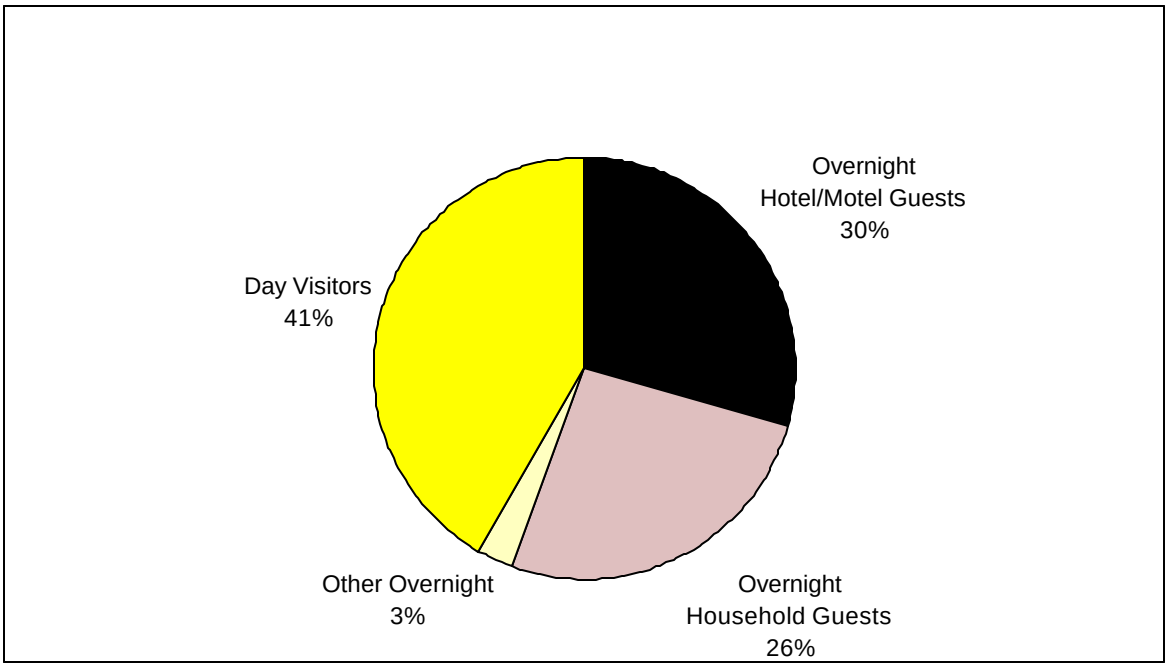
Visitor Characteristics

According to the San Diego Convention & Visitors Bureau, there were approximately 38 million total visitors to San Diego County in 2002. Total visitation declined 1.2 percent in 2002 compared to the prior year. Overnight visitation increased 1.6 percent, while day visitation decreased 4.7 percent.

Exhibit II-8 shows the visitor distribution for San Diego County in 2002. The exhibit shows that most visitors to San Diego were day visitors primarily from Southern California, (Mexican day-visitors are not counted as tourists and are discussed separately). Overnight visitors accounted for approximately 42 percent of all visitors. In 2002, there were 15.8 million overnight visitors to San Diego County. This figure increased from 14.7 million in 1997, for a 1.5 percent compounded annual growth rate.

While the Urban Core has visitor-serving uses, such as motels, and is along a major tourist travel corridor - the I-5 to Mexico, it currently is not very competitive in the regional tourism market. Its current minor niche is lodging for the budget traveler. Chula Vista's Bayfront is key for penetrating the region's visitor market, especially the traveler market to Mexico. The Urban Core's opportunity to improve its share of the visitor market would be enhanced with a strong link to the Bayfront. If the Urban Core were to attract visitors to the region on its own, it would have to develop a unique niche, probably centered on culture, music, and food, and as an affordable location with amenities for the business market. Still, the regional competition is great, and tourism will probably be a minor component of the Urban Core's economy.

Exhibit II-8 San Diego County Distribution of Total Visitors in 2002 (38 Million)



Source: San Diego County 2002 Overnight Visitor Profile Report
(San Diego Convention and Visitors Bureau and CIC Research)

The Mexican Market

The Mexican market from the Tijuana metro area is more an extension of the region's resident market than a tourist market. They are an important source of consumers for the region's retailers, particularly in South County. The city of Tijuana experienced dramatic growth during the 1990-2000 period, increasing its population by 62 percent. According to the 2000 census, 1.2 million[7] people lived in Tijuana, compared to 750,000 in 1990, for a 4.9 percent compounded annual growth rate. In addition, the state of Baja California increased its population by 49.8 percent, from 1.7 million to 2.5 million people during the same period for a 4.1 percent compounded annual growth rate. This trend is expected to continue, as Baja California has the second highest positive net migration among the states in Mexico.

During the second half of the 1990's, the Tijuana metro area grew economically due to the industrial growth associated with the Maquiladora program and NAFTA. However, this growth subsided due to the United States recession and increased competition and factory relocations to Asian countries. Job and economic growth has begun to rebound during the last year as the U.S. economy recovers.

[7] Instituto Nacional de Estadistica, Geografia e Informatica (INEGI)

Mexicans crossing the border for shopping account for a notable amount of total retail sales in different cities in San Diego County. San Diego Dialogue estimates that between 40-60 percent of all northbound border crossings are made for shopping. According to a survey of Chula Vista retailers conducted in the early 2000's by the Social, Behavorial, and Research Institute (SBRI) at California State University, San Marcos, in association with ERA, 25 percent of all business sales were to Mexican shoppers. San Diego Dialogue estimates that up to 65 percent of all retail sales in San Ysidro come from Mexican shoppers, while in Coronado, this figure is estimated at 10 percent. As the City of Tijuana continues to receive migration from central Mexico and the middle-class population increases, cities in south San Diego County will continue to experience significant sales volumes to Mexican nationals.

According to the United States Customs service, San Ysidro and Otay Mesa together had more than 9.7 million northbound pedestrian crossings in 2003, which represented 20.1 percent of all pedestrian crossings into the United States, increasing from 17.5 percent in 1997. San Ysidro and Otay Mesa increased its share of total northbound pedestrian crossings into California, from 43.7 percent in 1997 to 53.7 percent in 2003.

San Ysidro and Otay Mesa represented 25.3 percent of all private vehicle northbound crossings into the United States in 2003 and 68.3 percent of California, with 22.3 million crossings.

San Ysidro is the most traveled border crossing at either border; it alone comprised 13.8 percent of all border crossings in the United States. San Ysidro and Otay border crossings combined represent nearly one fifth of all U.S. border crossings, with 17.2 percent.

The majority of Mexicans crossing the border at San Ysidro and Otay are residents of the Tijuana metropolitan area, or approximately 92 percent. Many residents of Tijuana commute to work and do their shopping in the United States. The Universidad Autonoma de Baja California (UABC) conducted a survey in 2001 and estimated that people from Baja California spend at least $1.6 billion dollars every year in the San Diego region. The increase in average hourly crossings during weekends is directly associated to Mexicans crossing the border for shopping.

Since Mexicans are an important source of consumers in Chula Vista, the city is particularly vulnerable to the stability of the peso. When the peso was devalued in the early 1990s, taxable sales per capita in Chula Vista, in real terms adjusted for inflation, declined by more than 20 percent.

The Urban Core, with the Bayfront, does have the opportunity to leverage the Mexican market to expand the reasons Mexicans shop in Chula Vista, from staples, fashion, and services, to dining and entertainment, particularly for families. There are many links between residents in South Bay and Tijuana, such as business, family, and friends, and the Urban Core could position itself as one

of the primary areas within the border zone region where cross border business networking and personal gatherings can occur. The importance of the Mexican market to Chula Vista, however, should diminish somewhat, though remain significant, as the resident consumer base in the South Bay grows.

III. Demographic Context

The following section examines population growth and characteristics for the region, the City of Chula Vista, SRA-21 (western Chula Vista), and the Urban Core project area.

Population

SANDAG forecasts that San Diego County will grow from 2.8 million people in 2000 to almost than 3.9 million in 2030, adding 1.1 million people to the region, a 37 percent increase with a 1.1 percent compounded annual growth rate (CAGR). During the same period, SANDAG forecasts that the City of Chula Vista will grow from 173,000 to 278,000 people, increasing more than 105,000 people during the 30-year period, for a 60 percent increase and a 1.6 percent CAGR. Chula Vista is projected to receive approximately 10 percent of total population growth in San Diego County between 2000 and 2030. However, most of the growth in the City of Chula Vista is forecasted to occur east of Interstate Freeway I-805.

SANDAG's forecasts that population in SRA-21, western Chula Vista, will increase by 13 percent during this time period, from 108,000 to 123,000 people, for a net growth of 14,000, or a CAGR of 0.4 percent, well below citywide and countywide rates. SRA-21 is forecasted to house 13.5 percent of the net growth projected for the City of Chula Vista over the 30-year period. SANDAG's current forecasts assume a higher proportion of growth for Eastern Chula Vista and limited capacity for growth in the older SRA-21 neighborhoods, which limits population projections.

Urban Core Population

Since the Urban Core Study Area includes residents from ten different census tracts, ERA obtained the population of each census tract and applied percentages depending on the area of the census tract that formed part of the Urban Core to estimate population characteristics in the Urban Core[8].

SANDAG forecasts that population in the Urban Core Study Area may grow by 14.4 percent between 2000 and 2030, from 22,700 to 26,000, for a net growth of almost 3,300 people.

[8] The relevant census and their assumed proportions within the Urban Core are as follows: CT123.02 (100%), CT123.03 (20%), CT124.01 (30%), CT124.02 (100%), CT125 (25%), CT126 (20%), CT127 (100%), CT128 (20%), CT129 (20%) and CT 130 (100%).

Approximately 23 percent of the net growth in SRA-21 between 2000 and 2030 is forecasted to occur in the Urban Core.

Table III-1 shows population for San Diego County, Chula Vista, SRA-21 and the Project Area.

Table III-1 Population Growth Trends 2000-2030

Market Areas	2000	2003	2010	2020	2030	Numeric Change 2000-2030	Percent Change 2000-2030	Average Annual Growth Rate 2000-2030
Urban Core	22,709	23,177	23,543	25,138	25,975	3,266	14.4%	0.5%
SRA 21	108,907	109,789	113,140	119,048	123,053	14,146	13.0%	0.4%
Chula Vista	173,556	199,680	247,885	268,970	278,183	104,627	60.3%	1.6%
San Diego County	2,813,833	2,961,579	3,211,721	3,528,605	3,855,085	1,041,252	37.0%	1.1%

Source: SANDAG and Economics Research Associates

Age Distribution

As shown in Table III-2, by 2030 the proportion of the total population that are children and young adults in San Diego County, Chula Vista, SRA 21 and the Urban Core are expected to be less than in 2000. The age cohort between 35 and 54 is projected to remain approximately the same. In turn, the proportion of older-age cohorts is forecasted to increase significantly during this period. People between 55 and 74 years old are projected to increase from 13.4 percent to 22.8 percent of the total population in the Urban Core between 2000 and 2030. Similar increases are expected in SRA-21, the City of Chula Vista, and the county as a whole.

Table III-3 shows the age distribution for the Urban Core, SRA-21, Chula Vista and San Diego County in 2000 and 2030. SANDAG forecasts that the number of children and young adults in the Urban Core and SRA-21 will decline, and the number of middle-aged and senior adults will grow during the 30-year period, even though they are projected to grow in absolute numbers countywide. The number of people 55-years and older in the Urban Core and SRA-21 is projected to grow by over 4,000 and 18,700 people, respectively.

SANDAG's forecasts reflect the aging of the "baby-boom" generation, and the 140 percent increase in the number, and 70 percent increase in the percentage, of people 65 years and older by 2030. Since their projections are based on existing planning policy, they do not account for how a significant increase in urban housing may change the Urban Core's demographics and age distribution. The Urban Core's new urban housing development will help Chula Vista position itself to increase its share of the regional young adult market. Although new infill development in the Urban Core should appeal to young adults, who are often associated with urban housing, the young adult population is not expected to grow as rapidly regionally as the 55+ age groups. Secure urban housing also appeals to older populations due to their low maintenance, walkable street environments, and access to services. Consequently, the growing empty-nestor and senior market will also be important over the long-term.

Table III-2 Age Distribution Share in 2000 and 2030

	Urban Core		SRA-21		Chula Vista		SD County	
Age Groups (Years)	2000	2030	2000	2030	2000	2030	2000	2030
Total Pop	22,709	25,975	108,907	123,053	173,556	278,183	2,813,833	3,855,085
0-9	15.3%	11.2%	15.8%	11.0%	16.2%	11.6%	14.6%	11.7%
10-19	13.1%	10.9%	15.0%	12.0%	15.4%	12.6%	14.2%	12.1%
20-34	24.6%	19.7%	22.6%	18.3%	21.7%	17.3%	24.0%	20.7%
35-54	25.6%	24.1%	25.7%	25.1%	28.3%	28.7%	28.8%	25.2%
55-64	6.7%	11.1%	7.4%	12.7%	7.4%	12.8%	7.3%	11.1%
65-74	6.7%	11.7%	7.0%	11.6%	6.0%	9.8%	5.7%	10.2%
75+	8.0%	11.3%	6.5%	9.2%	5.0%	7.1%	5.5%	9.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SANDAG and Economics Research Associates

Table III-3 2000 and 2030 Age Distribution

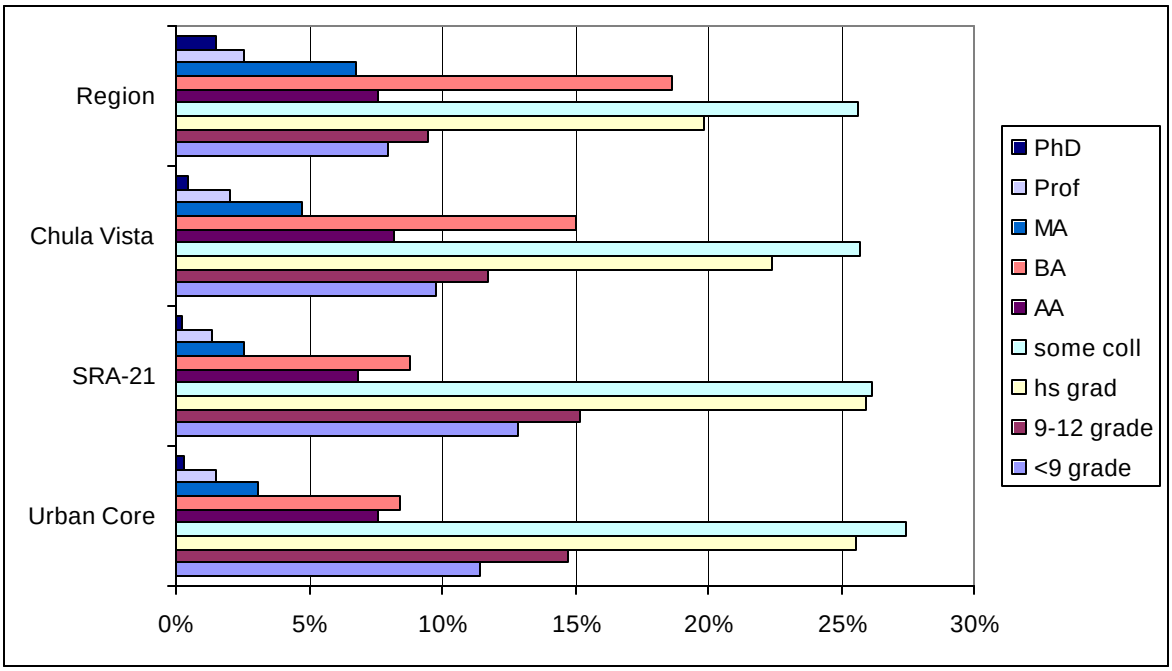
	Urban Core		SRA 21		Chula Vista		SD County	
Age Groups (Years)	2000	2030	2000	2030	2000	2030	2000	2030
0-9	3,479	2,916	17,235	13,539	28,063	32,384	411,450	451,210
10-19	2,986	2,833	16,383	14,790	26,683	35,035	399,588	467,415
20-34	5,595	5,110	24,579	22,502	37,720	48,130	674,313	796,297
35-54	5,804	6,265	28,016	30,854	49,040	79,788	810,066	971,914
55-64	1,526	2,889	8,078	15,670	12,921	35,710	204,666	427,320
65-74	1,512	3,036	7,583	14,331	10,442	27,286	160,059	394,142
75+	1,807	2,926	7,033	11,367	8,687	19,850	153,691	346,787
Total Pop	22,709	25,975	108,907	123,053	173,556	278,183	2,813,833	3,855,085

Source: SANDAG and Economics Research Associates

Education

In 2000, the population of the Urban Core and SRA-21 had less schooling than the population of Chula Vista as a whole and San Diego County, as shown in Exhibit III-1. In 2000, of the total adult population 25 years and over, 26 percent of the Urban Core and 28 percent of SRA-21 did not finish high school, compared to 22 percent for the City of Chula Vista and 17 percent for San Diego County. Likewise, only 8 percent of the population 25 years and over in the Urban Core had a bachelor's degree and 9 percent in SRA-21, compared to 15 percent in Chula Vista and 19 percent for San Diego County.

Exhibit III-1 San Diego County, Chula Vista and SRA-21 Education



Source: SANDAG; and Economics Research Associates

Households

SANDAG forecasts that the Urban Core may add 540 new households between 2000 and 2030, representing 24 percent of total new households in SRA-21 during this timeframe. SANDAG forecasts that SRA-21 will receive 8.2 percent of total new household formation in the City of Chula Vista between 2000 and 2030, adding almost 2,200 households, for a 0.2 percent CAGR. Household projections forecast most of the growth in eastern Chula Vista. Nevertheless, Chula Vista is projected to add over 26,800 new households or 8.8 percent of total household formation in San Diego County between 2000 and 2030, for a 1.3 percent CAGR. San Diego County is projected to add more than 300,000 new households during this time period, for a 0.9 percent CAGR. Therefore, while Chula Vista is projected to grow faster than the countywide average, SRA-21 and the Urban Core are not.

Table III-4 shows households for the Urban Core, SRA-21, Chula Vista and San Diego County for 2000, 2010, 2020 and 2030.

Table III-4 SRA 21, Chula Vista and San Diego County Growth Trends

Market Areas	2000	2010	2020	2030	Numeric Change 2000-2030	Percent Change 2000-2030	Average Annual Growth Rate 2000-2030
Urban Core	8,769	8,891	9,182	9,309	540	6.2%	0.2%
SRA-21	37,694	38,373	39,205	39,890	2,196	5.8%	0.2%
Chula Vista	57,705	78,779	82,843	84,519	26,814	46.5%	1.3%
Region	994,677	1,116,323	1,193,475	1,296,496	301,819	30.3%	0.9%

Source: SANDAG and Economics Research Associates

Household Income

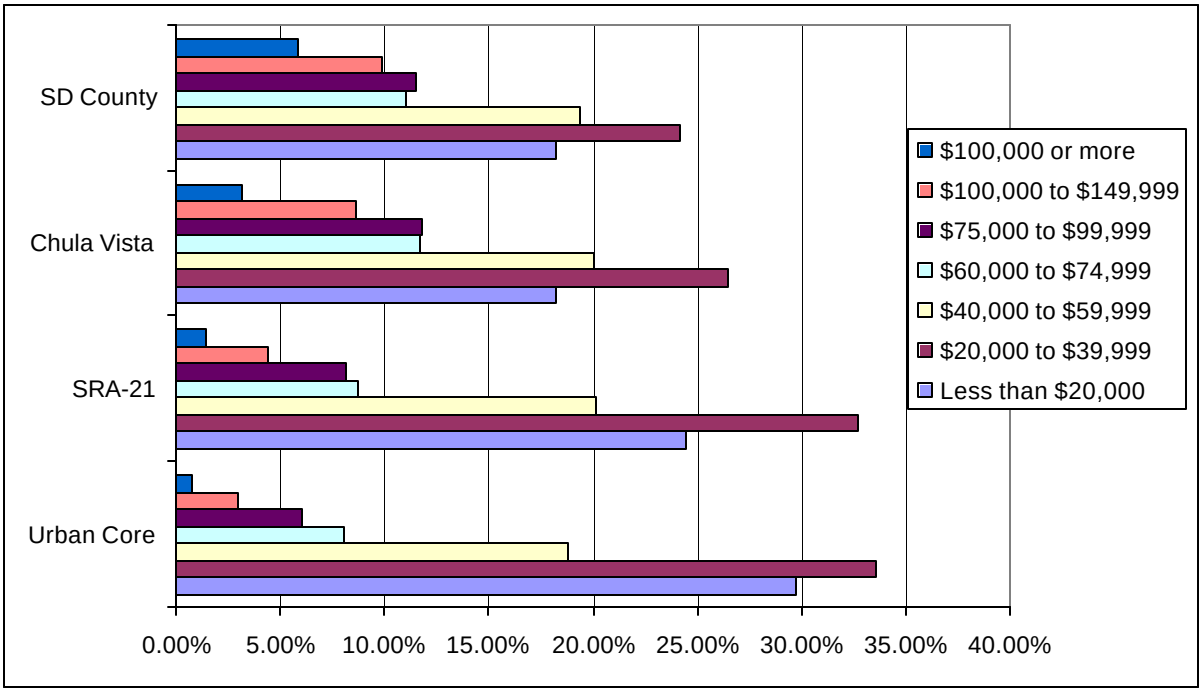
According to SANDAG, the Urban Core and SRA-21 had a disproportionate amount of low-income households compared to Chula Vista and the county as a whole in 2000. Households earning less than $20,000 represented 29.7 percent of all households in the Urban Core and 24.5 percent of households in SRA-21. In Chula Vista and San Diego County, only 18 percent of all households earned less than $20,000 per year. Households with average incomes between $20,000 and $39,999 represented 33.6 percent and 32.7 percent of all households in the Urban Core and SRA-21 respectively, compared to 26.4 percent in Chula Vista and 24.1 percent countywide.

All areas had approximately the same share of households with incomes between $40,000 and $59,999. Approximately 14.1 percent of households in the Urban Core and 16.8 percent of households in SRA-21 earned between $60,000 and $100,000, significantly lower than Chula Vista and San Diego County, with 23.5 and 22.6 respectively.

Households earning more than $100,000 represented only 3.8 percent of all households in the Urban Core and 5.8 percent of households in SRA-21. Comparatively, 11.8 percent and 15.7 percent of all households in the City of Chula Vista and San Diego County respectively earned more than $100,000 in 2000.

Exhibit III-2 shows the estimated annual household income distribution for the individual market areas in 2000.

Exhibit III-2 2000 Annual Household Income



Source: SANDAG and Economics Research Associates

ERA calculated a weighted average median household income of $31,797 for the Urban Core in 2000, $3,328 lower than the SRA-21 median household income of $35,125. SRA-21 median household income is $9,700 lower than Chula Vista's median household income of $44,834. In 2000, median household income for San Diego County stood at $47,268, $12,100 higher than the City of Chula Vista. Median household income citywide relative to the countywide average, however, is expected to improve as higher-income communities are developed in Chula Vista, particularly in eastern Chula Vista.

Racial and Ethnic Composition

Table III-5 shows race distribution for the Urban Core, SRA-21, Chula Vista and San Diego County for 2000 and 2030. Hispanics are noted separately, as it is an ethnic distinction that crosses races, rather than a racial distinction. Of the Non-Hispanic population, Whites occupy the highest percentage for all regions in 2000. By 2030, however, Whites are forecasted to decrease considerably as a percentage of the total population in all regions.

Table III-5 2000 and 2030 SRA-21, Chula Vista and San Diego County Race and Ethnicity

	Race and Ethnicity							
Year	2000	2000	2000	2000	2030	2030	2030	2030
Area	Urban Core	SRA-21	Chula Vista	SD County	Urban Core	SRA-21	Chula Vista	SD County
NH White	32.2%	30.0%	31.7%	55.0%	9.7%	9.2%	10.5%	39.7%
NH Black	5.0%	4.3%	4.3%	5.5%	5.8%	5.0%	5.8%	5.1%
NH Am Indian	0.4%	0.4%	0.3%	0.5%	0.2%	0.3%	0.5%	0.5%
NH Asian	4.9%	5.0%	10.6%	8.7%	5.1%	5.2%	13.8%	9.5%
NH Hawaiian	0.4%	0.5%	0.5%	0.4%	1.5%	1.6%	2.6%	2.1%
NH other	0.2%	0.2%	0.2%	0.2%	1.6%	1.3%	2.6%	2.3%
NH 2+ races	2.8%	2.5%	2.7%	2.9%	3.3%	3.2%	4.3%	3.9%
Subtotal	45.9%	42.9%	50.4%	73.3%	27.3%	25.7%	40.1%	63.1%
Hispanic Origin	54.1%	57.1%	49.6%	26.7%	72.7%	74.3%	59.9%	36.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SANDAG and Economics Research Associates

Hispanics are projected to increase as a percentage of total population in all regions between 2000 and 2030. In the Urban Core, the Hispanic population is forecasted to increase from 54 percent of the total population in 2000 to 73 percent in 2030; in SRA-21, Hispanics are projected to increase from 57.0 percent to 74.0 percent of total population during the 30-year period.

Implications for the Urban Core

SANDAG forecasts relatively lesser population and household growth, a largely aging, largely Hispanic and multicultural population, with relatively lower incomes and education levels in western Chula Vista and the Urban Core compared to countywide averages. These characteristics have implications for housing affordability and consumer buying power and preferences.

These forecasts, however, reflect existing trends and capacities associated with current General Plan land use policies. Since SANDAG forecasts significant growth in South Bay that will change South Bay's demographic characteristics, the opportunity exists for the Urban Core to reinvent itself by changing land use policy to accommodate a greater share of South Bay and countywide growth, and modify its projected demographic characteristics in the process.

For example, SANDAG forecasts continued high shares of lower income households and a declining young adult population, even though incomes are projected to rise regionally and the

young adult population is projected to grow in number regionally, though declining proportionately. New development in the Urban Core can help diversify its household income profile and increase the Urban Core's share of the growing regional young adult population, which will present new opportunities for retail services.

While this opportunity exists to diversify the Urban Core's demographic trends, it should be recognized that most of the Urban Core's and western Chula Vista's demographic characteristics is already in place, associated with existing housing, and that these characteristics will continue to have influence even as the Urban Core diversifies with new development.

Many of the demographic trends are regional. The average age of population is rising, as the baby-boom generation ages, and housing and districts that appeal to an aging population will be important. Environments that appeal to a multi-cultural population will be important. Housing that is affordable will be important.

IV. Real Estate Market Overview

This section presents real estate market trends for office, retail, and residential uses in Chula Vista and the Urban Core project area.

Retail Market

The retail sector in San Diego County has remained strong over the past few years. According to CB Richard Ellis, vacancy rates throughout the county in the 4th Quarter 2003 stood at 2.7 percent, compared to the national average of 6.8 percent. From the 4th quarter 2002 to the 4th quarter 2004, the countywide average vacancy rate averaged 3.2 percent. The vacancy rate has been declining steadily since the early 1990's when the rate peaked at 9 percent.

It is estimated that 1.5 million square feet of new retail space was absorbed in 2003, a notable increase from 2002 when 1.1 million square feet were absorbed.

According to CB Richard Ellis, there are 2.7 million square feet of retail space in the Chula Vista/Bonita sub-market, representing 5.7 percent of the 48.1 million leasable retail space in the region (including San Diego County and Temecula/Murrieta) that CB Richard Ellis inventories (50,000 square feet or greater). Approximately 380,000 square feet was under-construction in the Chula Vista/Bonita sub-market, or approximately 44.3 percent of the 858,000 square feet under construction in San Diego County, as of the 4th Quarter, 2003. The Chula Vista/Bonita retail market maintains a very low vacancy rate, 0.6 percent, at lower-than average rents. The average retail lease rate of $1.65 in the 4th Quarter 2003 was 91 percent of the countywide average of $1.82.

The CoStar Group reports 80.1 million square feet of total retail space countywide in March 2004, plus 538,000 square feet under-construction, including owner occupied and smaller retail space, of which 2.8 million square feet, or 3.6 percent, is vacant and available.

The Urban Core Retail Market

Retail space in the Urban Core is mostly concentrated in four distinct business corridors, namely H Street, Broadway Avenue, 3rd Avenue and E Street. F Street also has retail space at the intersection with Third Avenue. All four retail corridors attract shoppers from the local market, South County, and Mexico, though some are more regional serving while others are more local

serving. H Street includes the frontage for Chula Vista Center, an 870,000 square foot older regional shopping center owned by General Growth that is undergoing renovation. Third Avenue is Chula Vista's historic downtown "Main Street." Broadway is a community and regional serving strip-retail corridor that serves western South County.

Retail Rents

Most of the retail space in these corridors is small to medium size, with the exception of the Chula Vista Shopping Center, located on H Street. Average asking triple-net (NNN) rents per square foot in the Urban Core vary depending on the business corridor, as follows:

- According to Grubb and Ellis, asking triple-net (NNN) rents in the L Street Corridor range between $1.30 and $1.40 per square foot, with some exceptions where rents range between $2.00 and $2.50 per square foot.

- Asking NNN rents at the intersection of Broadway and H range between $2.25 and $2.60 per square foot, with vacancy rates around 5 and 7 percent.

- According to Voit Commercial, along Broadway Avenue, rates vary between $1.50 and $2.00 per square foot NNN, while rents along 3rd Avenue range between $1.00 and $1.25 per square foot, with occupancy rates at nearly 100 percent.

Some projects are reportedly obtaining higher lease rates, such as the Gateway project at the corner of 3rd Avenue and H Street. According to Jim Pieri at Mountain West Real Estate, the phase I Gateway project is completely leased, with rates ranging between $2.75 and $3.00 NNN per square foot per month.

For comparison, these rates, including the new Gateway project fall below asking rates at the Eastlake Village Center in eastern Chula Vista, with asking rents at $3.50 per square foot NNN.

Retail Building Sales

Sales of retail buildings in the City of Chula Vista and the Urban Core have appreciated in recent years, as shown in Table IV-1. The Urban Core significantly increased its sales price per square foot in 2001 compared to 2000. Nevertheless, it remained below the average Price/SF for the City of Chula Vista in 2001 and 2002. In 2003, the study area surpassed the City by almost $9 per SF, and 16 of the 21 sales in the city occurred in the Urban Core.

Table IV-1 Chula Vista and Urban Core Retail Space Sales Price/SF and Sales/Year

	Chula Vista		Urban Core	
Year	Price/SF	Sales/Yr.	Price/SF	Sales/Yr.
2000	$135.03	15	$82.54	5
2001	$121.28	20	$119.42	11
2002	$137.60	18	$132.39	8
2003	$172.89	21	$181.48	16
Mar-04	$202.55	4	$188.33	2

Source: Costar and Economics Research Associates

Office Market

According to CB Richard Ellis, in the 4th quarter of 2003 there were 48.6 million square feet of leasable office space in San Diego County, out of which more than 952,000 were located in South San Diego (which includes Chula Vista), accounting for approximately 2 percent of total office leasable space in the region. The South San Diego office sub-market is defined as space located south of Freeway 94 and east of Freeway 5. The square footage mentioned includes buildings with 10,000 square feet or more and does not include owner occupied buildings.

In the 4th quarter of 2003, office space vacancy rates stood at 11.5 percent for San Diego County and 10.0 percent for South San Diego. San Diego County recorded average lease rates of $1.80 per square foot, while rates for South San Diego stood at $1.12. Of the more than 600,000 square feet under construction in the region, approximately 67,000, or 10.5 percent, were being built in the South San Diego sub-market.

According to the CoStar Group, the region had 82.1 million square feet of total office space, including owner-occupied buildings (except government), medical buildings (except hospitals), and smaller buildings, or 69 percent greater than CB Richard Ellis' count of leasable office space greater than 10,000 square feet. CoStar Group estimates that 11.4 million square feet of this inventory, or 13.9 percent, is vacant including sublet space that is available.

The Urban Core Office Market

Most of the office space within the Chula Vista Urban Core is comprised of professional services offices and medical services. The services include medical and dental clinics, insurance, tax preparation and travel agencies. Office space in the study area is mostly located in small one or two story buildings, although new multiple story buildings have been built in the past few years, such as the Chula Vista Gateway, with its first phase built in 2001 and the second phase currently in construction.

Once completed, the Chula Vista Gateway project will add a total of 285,000 square feet of office space and 62,000 square feet of retail space to the Urban Core. This project, which is the first major office development in downtown for more than 20 years, is an important indicator for demonstrating demand for Class A space in the Urban Core. However, as the first new office development in decades, its relatively rapid absorption and high achievable rents may also reflect pent-up demand rather than stable, sustainable demand. Additional office developments are needed to test the depth of demand over time.

Office Rents

Asking rents for other office space in the Urban Core ranges between $1.65 and $1.85 per square foot triple net, well below asking rents for office space at the Eastlake Business Center for example, where rents go for $2.25 per square foot plus janitorial and electric. Lease rates for office space in the Gateway project range between $2.5 and $2.75 per square foot per month, well above the countywide average and the Eastlake Business Center.

Office Building Sales

The average sales price per square foot for office space in Chula Vista has fluctuated since 2000, with the highest value recorded in 2001. Price per square foot for sales transactions in the Urban Core has been higher than the City of Chula Vista for the last three years, although they have also been inconsistent, as shown in Table IV-2.

Table IV-2 Chula Vista and Urban Core Office Space Sales Price/SF and Sales/Year

	Chula Vista		Urban Core	
Year	Price/SF	Sales/Yr.	Price/SF	Sales/Yr.
2000	$138.18	10	$110.57	4
2001	$145.03	8	$149.31	7
2002	$140.45	11	$163.64	6
2003	$130.22	5	$143.49	3

Source: Costar and Economics Research Associates

Residential Market

For Sale Housing

As with most of San Diego County, home prices in the City of Chula Vista have increased dramatically in recent years. According to DataQuick Information Systems, the median home price in San Diego County increased from $358,000 in April 2003 to $439,000 in April 2004, a 22.6 percent increase during the one-year period.

During the same time period, single-family home appreciation increased more than 26.0 percent in all Zip Codes in the City of Chula Vista. The median sale price for existing single-family homes in the 91910 Zip Code (where the Urban Core is located), increased from $365,000 in April 2003 to $480,000 in April 2004, for a 31.5 percent increase. Condominium sales in the 91910 Zip Code increased from $267,000 to $300,000 during the same time period, for an increase of 12.4 percent. Table IV-3 shows total sales and median homes sale values for existing single-family and condominium homes for all Zip Codes in Chula Vista for April 2003 and 2004.

The highest appreciation for existing single-family homes occurred in the newer areas of Chula Vista, in Zip Codes 91914 and 91915. Interestingly, appreciation for existing condominiums between April 2003 and 2004 was higher than 26 percent in all Zip Codes, except Zip Code 91910.

Table IV-4 shows total sales and median homes sale values for new single-family and condominium homes combined for all Zip Codes in Chula Vista for April 2003 and 2004. Zip Code 91910 had only one new home sale in April 2003 and none in 2004, compared to all other Zip Codes where new housing is still being developed.

Table IV-3 Chula Vista Existing Single Family and Condominium Home Sales for April 2003 and 2004

		Single Family Homes					Condominiums				
Place	**ZipCode**	**No. Sold**		**Median 03**	**Median 04**	**%Change**	**No. Sold**		**Median 03**	**Median 04**	**%Change**
Chula Vista N	91910	60	67	$ 365,000	$ 480,000	31.5%	29	40	$ 267,000	$ 300,000	12.4%
Chula Vista S	91911	54	58	$ 329,500	$ 417,500	26.7%	43	37	$ 216,500	$ 287,500	32.8%
CV-E.Lake-Otay Ranch	91913	43	63	$ 379,000	$ 510,000	34.6%	22	15	$ 269,500	$ 340,000	26.2%
Chula Vista NE	91914	13	13	$ 425,000	$ 600,000	41.2%	7	5	$ 305,000	$ 395,000	29.5%
Chula Vista SE	91915	25	39	$ 380,000	$ 567,500	49.3%	13	12	$ 302,000	$ 373,500	23.7%

Source: DataQuick Information Systems

Table IV-4 Chula Vista New Single Family and Condominium Home Sales for April 2003 and 2004

		New Single-Family/Condominiums			
Place	**ZipCode**	**No. Sold**	**Median 03**	**Median 04**	**%Change**
Chula Vista N	91910	1	n/a	$ 418,000	$ -
Chula Vista S	91911	50	22	$ 259,000	$ 358,250 38.3%
CV-E.Lake-Otay Ranch	91913	30	80	$ 471,250	$ 434,750 -7.7%
Chula Vista NE	91914	85	62	$ 455,000	$ 531,250 16.8%
Chula Vista SE	91915	12	52	$ 494,250	$ 583,000 18.0%

Source: DataQuick Information Systems

In June 2004, the median sales price of homes in Zip Code 91910, compared to the countywide average, was as follows:

	Re-Sale Single-family	Re-Sale Condominiums	New Single-Family/Condominiums
CV Zip Code 91910	$467,500	$350,000	$667,750
SD Countywide	$520,000	$365,000	$440,000
CV/SD County Median	90%	96%	152%

Rental Housing

According to Market-Pointe Realty, the average rent in San Diego County in September 2003 stood at $1,123 per month, while vacancy rates increased slightly to 2.06 percent, well below the vacancy level needed for a fluid and competitive market. The average monthly rental asking price in San Diego County was $1.31 per square foot.

In the case of the Urban Core Project Area, most of the rental housing was built more than 20 years ago and is reflected in the asking prices compared to the newer areas of Chula Vista. ERA found average rental rates in the Urban Core to be $0.99 per square foot, compared to $1.44 in the Otay Ranch areas. Average asking rents in the Urban Core were $930 per month. According to Market Pointe Realty, the vacancy rate in zip code 91910 stood at 2.4 percent, also below what is necessary for a competitive market. The vacancy rate was obtained with a sample of 80 projects and 4,132 units.

Table IV-5 shows asking rents for several apartment buildings in the Urban Core study area.

Table IV-5 June 2004 Asking Rents for Apartments located in the Chula Vista Urban Core

Project Name	Type	Rent per Month	SQFT	PR/SQFT/MNTH
Woodlawn Colonial	1 Br/1 Bth	$720	576	$1.25
	2 Br/2 Bth	$920	900	$1.02
Palm Shadows	1 Br/1 Bth	$725	560	$1.29
	2 Br/1 Bth	$895	800	$1.12
	2 Br/2 Bth	$995	890	$1.12
Alva Gardens	2 Br/2 Bth	$1,175	1900	$0.62
	2 Br/1.5 Bth	$1,150	1872	$0.61
Park Marina Apts	2 Br/2 Bth	$950	1250	$0.76
Meheli Palm Apts	1 Br/1 Bth	$675	800	$0.84
Center Towers	1 Br/1 Bth	$795	700	$1.14
	2 Br/1 Bth	$995	900	$1.11
	2 Br/2 Bth	$1,100	1100	$1.00
Sunnyfresh Apts.	2 Br/1 Bth	$1,000	950	$1.05
			Average	**$0.99**

Source: Economics Research Associates

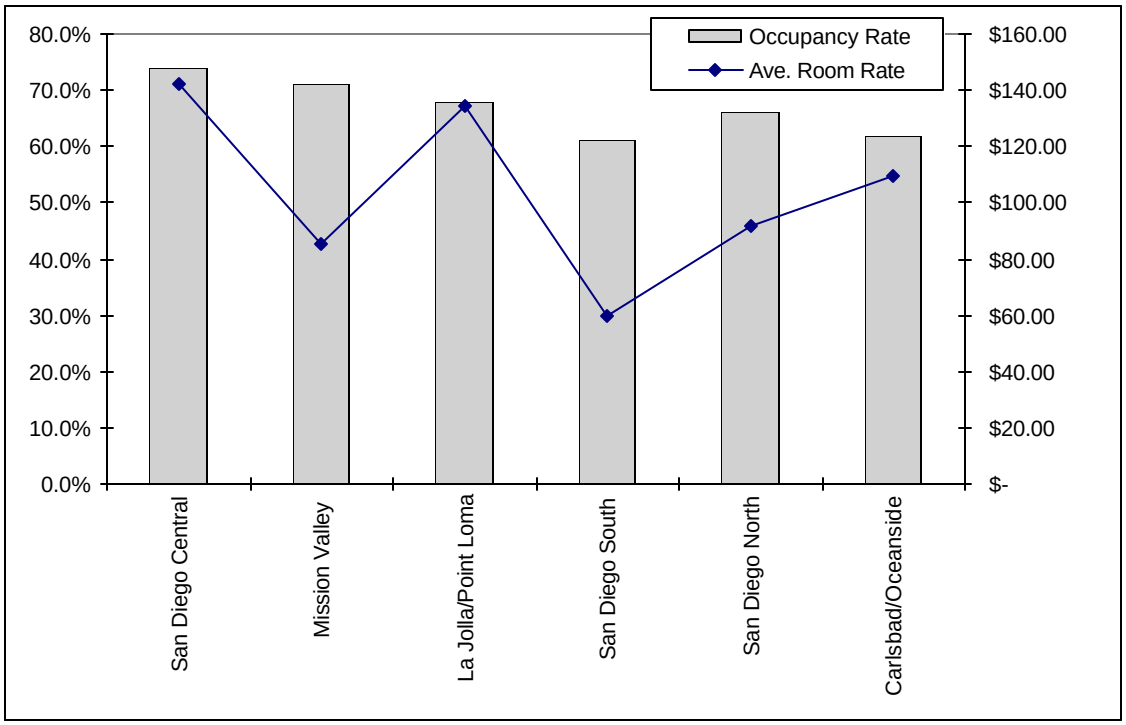
Lodging Trends

San Diego County's hotel inventory has grown over the last few years with the addition of several hotels. All new hotels have been built outside of Chula Vista, in the northern part of the County or downtown San Diego.

Exhibit IV-1 shows occupancy rates in 2002 by sub-market. As shown in the Exhibit, the San Diego South Market, which includes the City of Chula Vista, had the lowest occupancy rate of all sub-markets with 61.1 percent throughout 2002, a 3.9 percent decrease compared to the 65.0 percent occupancy rate for South San Diego in 2001. Occupancy rates for San Diego County were 69.9 percent in 2001 and 68.4 percent in 2002.

Occupancy rates in the San Diego South sub-market increased 2.0 percentage points between 1997 and 2003, from 58.4 percent to 60.4 percent respectively, as shown in Exhibit IV-2. As shown in the Exhibit, rates increased consistently between 1997 and 2001, but fell in 2002 and 2003 after the 9/11 attacks.

Exhibit IV-1 Hotel Performance by Sub-markets

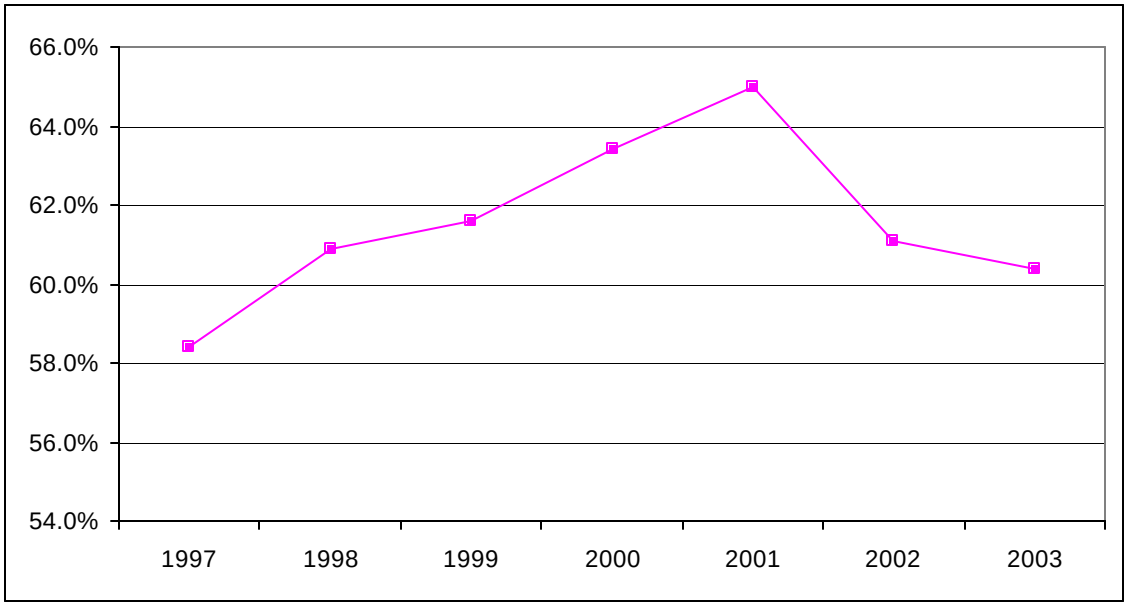


Source: San Diego County 2002 Overnight Visitor Profile Report

The average daily room rate in South San Diego was the lowest of all sub-markets, at $59.85. In San Diego County, the average daily room rate in 2002 was $110.81.

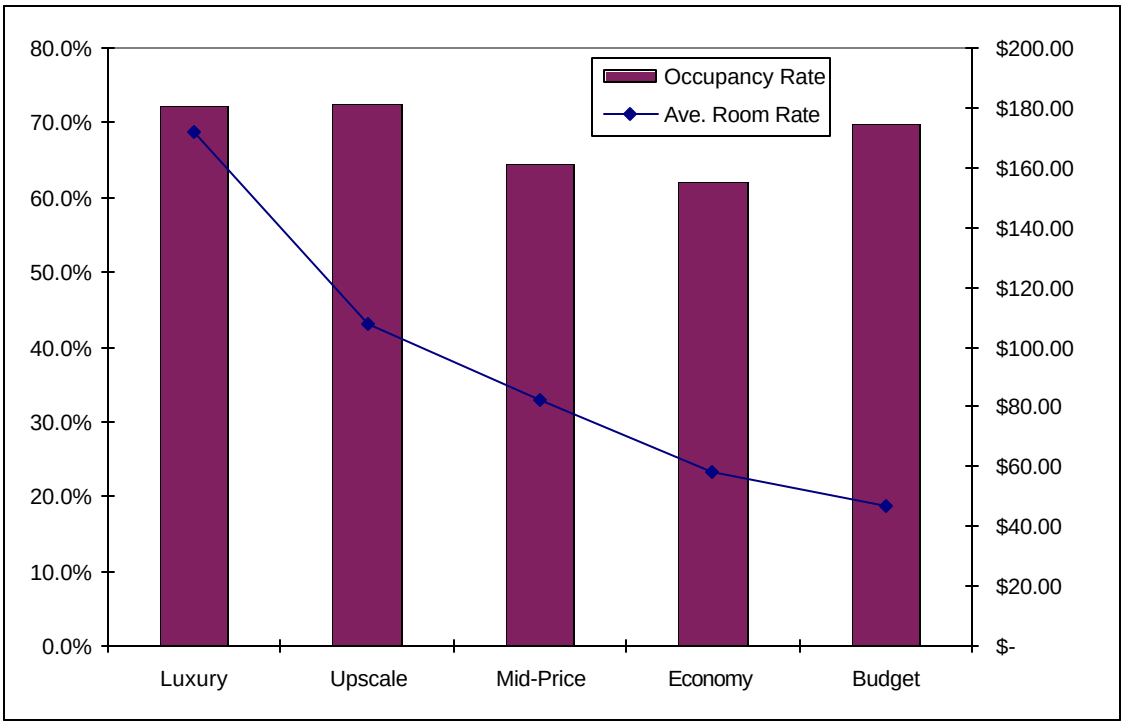
Exhibit IV-3 shows occupancy rates in 2002 by type of hotel in the San Diego Region. Luxury and upscale hotels (as defined by Smith Travel Research and the Convention & Visitors Bureau) recorded the highest annual occupancy rates, while the economy hotel category recorded the lowest occupancy rate of all groups at 62.2 percent. Nevertheless, when compared to occupancy rates in 1993, the occupancy rate for the economy category increased 8 percentage points, while the budget category recorded the biggest jump, from 56.4 percent occupancy in 1993 to 69.8 percent in 2002, a 13.4 percentage point increase. During the same period, the occupancy rate for the luxury category decreased by 1.5 percentage points, while upscale and mid-priced hotels showed a slight increase in occupancy rate.

Exhibit IV-2 San Diego South Sub-market Occupancy Trends



Source: Smith Travel Research

Exhibit IV-3 San Diego Hotel Performance by Type of Hotel



Source: San Diego County 2002 Overnight Visitor Profile Report
(San Diego Convention and Visitors Bureau and CIC Research)

Transient Occupancy Tax

There are 15 motels in the Urban Core Study Area. Table IV-6 shows the list of motels. The Urban Core only has small motels. The Transient Occupancy Tax (TOT) received from these motels was $227, 894 in 2002 and $224, 102 in 2003, for a 1.7 percent decrease. The TOT collected seems low considering the number of motels in the Urban Core. It should be noted, however, that some of these hotels are rather small, and rentals of 30 or more days are customary, excluding them from paying TOT.

Table IV-6 Chula Vista Urban Core Motels

	Name	Address	Rooms	RAC Rate Week	RAC Rate Weekend
1	Motel 6	745 E Street	176	$ 45.99	$ 59.99
2	Days Inn	699 E St.	104	$ 79.00	$ 149.00
3	South Bay Inn (Best Western)	710 E St.	76	$ 94.46	$ 104.46
4	Traveler Inn Suites	235 Woodlawn Ave.	85	$ 69.99	$ 79.99
5	Royal Vista Inn	632 E St.	80	$ 51.70	$ 66.00
6	Vagabond Inn	230 Broadway	90	$ 69.95	$ 79.95
7	Highway Inn Motel	74 Broadway	41	$ 65.00	$ 50.00
8	Avon Motel	99 Broadway			
9	Big 7 Motel	333 Broadway	45		
10	Riviera Motel	372 Broadway	22	$ 40.00	$ 45.00
11	Travel Inn	394 Broadway	70	$ 90.00	$ 110.00
12	Rodeway Inn	778 Broadway			
13	Bay Cities Motel	864 Broadway			
14	Early California Motel	692 H St.	41	$ 42.00	$ 75.00
15	El Primero Hotel	416 3rd Ave.	22	$ 80.00	$ 90.00

Source: Economics Research Associates

Recent Property Sales Transactions

According to Costar, since January 2000, there have been 318 commercial property sales transactions in the City of Chula Vista, out of which 139 were in the Urban Core Study Area, representing almost 44 percent of total property sales in the City. The majority of the sales in both the City of Chula Vista and the study area were building transactions, with 257 and 132 respectively. Land sales transactions in Chula Vista since January 2000 totaled 57, while the Urban Core registered 7 in the same time period.

Property Sales Transactions

More than 80 percent of all property sales transactions (building and land) in the City of Chula Vista since January 2000 have been building sales. In the case of the Urban Core Study Area, 95 percent of all transactions were building sales. Interestingly, more than 60 percent of all office, apartment and hotel buildings sold in the City of Chula Vista were located within the Urban Core.

In addition, 54 percent of all retail buildings sold since January 2000 were in the study area. Conversely, only 5 percent of total industrial buildings sold in the city since 2000 were located in the study area.

In total, since January 2000, building sales transactions in the Urban Core represented 51 percent of all building sales transactions in the City of Chula Vista, as shown in Table IV-7.

Table IV-7 Building Sales Transactions by Category since January 2000

	City of Chula Vista	Urban Core Study Area	Percent
Office Building	35	21	60%
Industrial Building	39	2	5%
Apartment Building	97	62	64%
Retail Building	78	42	54%
Hotel/Motel Building	8	5	63%
Total	**257**	**132**	**51%**

Source: Costar and Economics Research Associates

For every category, ERA compiled median square footage and price per square foot for property sales transactions in the City of Chula Vista as well as the Urban Core since 2003, as shown in Table IV-8 and Table IV-9. Median values were preferred as mean averages were significantly skewed upwards due to a few properties that sold for well above average.

Table IV-8: SF and Price per SF for Building Sales Transactions by Category in Chula Vista since 2003

	SF			Price/SF		
	Median	Low	High	Median	Min	Max
Office Building	16,626	748	35,000	$ 139.76	$ 80.90	$ 441.18
Industrial Building	10,000	3,250	90,000	$ 84.73	$ 70.00	$ 115.38
Apartment Building	7,776	2,400	68,925	$ 154.21	$ 97.21	$ 225.83
Retail Building	4,730	750	55,750	$ 176.14	$ 44.81	$ 1,626.67
Hotel/Motel Building	3,684	-	-	$ 176.44	$ -	$ -

Source: Costar and Economics Research Associates

Table IV-9: SF and Price per SF for Building Sales Transactions by Category in the Urban Core since 2003

	SF			Price/SF		
	Median	Low	High	Median	Min	Max
Office Building	8,700	748	35,000	$ 166.67	$ 94.29	$ 441.18
Industrial Building 1/	10,150	-	-	$ 66.95	-	-
Apartment Building	6,744	2,400	63,750	$ 150.33	$ 117.54	$ 225.83
Retail Building	4,730	1,512	19,200	$ 161.09	$ 97.25	$ 474.71
Hotel/Motel Building	-	-	-	-	-	-

1/ Only two transactions. Average instead of median taken

Source: Costar and Economics Research Associates

Land Sales Transactions

Table IV-10 shows land sales transactions by category for the City of Chula Vista and the Urban Core Study Area, as well as the percent of the total in the study area. Most of the land sales transactions occurred outside the Urban Core, which has limited vacant parcels. Noticeably, five of the seven land sales transactions in the Urban Core were commercial related, representing more than 20 percent of the total commercial land sales transactions in the City of Chula Vista.

In total, land sales transactions in the Urban Core represented 11 percent of all land sales in the City of Chula Vista since January 2000.

Table IV-10: Land Sales Transactions by Category

	City of Chula Vista	Urban Core Study Area	Percent
Commercial Land	23	5	22%
Industrial Land	14	0	0%
Residential Land	20	1	5%
Total	**57**	**6**	**11%**

Source: Costar and Economics Research Associates

Table IV-11 and Table IV-12 show median square footage and price per square foot for land sales transactions in the City of Chula Vista and the Urban Core since 2003.

Table IV-11: SF and Price per SF for Land Sales Transactions by Category in Chula Vista since 2003

	SF			Price/SF		
	Median	Low	High	Median	Min	Max
Commercial Land	40,510	5,750	576,299	$ 15.86	$ 3.66	$ 65.22
Industrial Land	252,212	20,037	1,943,647	$ 6.80	$ 3.09	$ 32.44
Residential Land	469,000	146,500	741,000	$ 39.29	$ 22.75	$ 39.56

Source: Costar and Economics Research Associates

Table IV-12: SF and Price per SF for Land Sales Transactions by Category in the Urban Core since 2003

	SF			Price/SF		
	Median	Low	High	Median	Low	High
Commercial Land 1/	9,775	-	-	$ 56.16	$ -	$ -
Industrial Land		-	-		-	-
Residential Land 2/	-	-	-	$ -	-	-

1/ Only two transactions. Average instead of median taken

Source: Costar and Economics Research Associates

Implications for the Urban Core

The real estate market indicators are strong for the residential and retail sectors, with rising prices and low vacancy rates countywide and within the Urban Core. Though rising, commercial retail rents and apartment rental rates in the Urban Core are below average, reflecting its older building stock. Occupancy rates are very high, indicating strong demand at existing price points. It would be difficult to support new development at commercial retail and apartment rental rates associated with the Urban Core's older building stock. New development will have to be able to command higher than average rents for the Urban Core.

Examples of new ownership housing are limited; however, the resale price of single-family homes and condominiums are growing and healthy, though moderately lower than the countywide average and prices in eastern Chula Vista. The relative affordability of housing in the Urban Core provides a near to mid-term advantage and market opportunity.

While the office sector countywide has moderately higher vacancy rates than other types of income property, office space in the Urban Core has low vacancy rates. Rents in the Urban Core, however, are lower than average, reflecting the older nature of most existing office buildings. The higher rents and strong occupancy rates achieved at the Gateway project indicate that quality new office developments can generate relatively high rental income. Whether these values were achieved due to pent-up demand from a market that had not seen new Class A office development in decades, or reflect a developing and sustainable office sub-market remains to be seen.

The lodging inventory in the Urban Core, which is comprised of older properties, is positioned for the budget traveler. The low rents and occupancy rates, and declining TOT revenues indicate that lodging is the weakest of the land uses that the Urban Core may potentially develop. While South Bay at some point may support a business hotel, Chula Vista's Bayfront or the Eastern Urban Center may be better positioned.

Commercial land prices in the Urban Core, though high for Chula Vista, are low relative to downtown San Diego, and present an opportunity to capture development, particularly urban housing development, that use to be feasible in downtown San Diego, but is no longer feasible given downtown San Diego's land prices. Compared to eastern Chula Vista, however, the Urban Core achieves lower rents, but high land prices, which makes it financially difficult to develop a financially feasible project. Future densities in the Urban Core probably have to be higher to achieve enough revenue per acre to cover land prices. How developers provide parking affordably while increasing densities, while keeping rents and prices in line with the market, will be an important challenge.

V. Market Demand Parameters

Based on the analysis of the economic base, historic and current demographic characteristics, and real estate market trends, potential long-term demand for three types of land uses that may become integral to the Urban Core strategy was estimated. These include retail, residential and office uses. The purpose of these forecast ranges are to provide capacity parameters for long-term land use planning. Given the long-term nature of these forecasts and the uncertainty associated with a 30-year time horizon, they should not be interpreted as precise annual market absorption projections.

Office Demand

Table V-1 presents projected growth for leasable office space over time countywide using an average employment density factor of 249 square feet per worker, which is calculated by dividing growth in leasable office space from 1990 to 2000 by employment growth in office-related industries from 1990 to 2000. This ratio may be more than required per worker since it may include a modest amount of new office space built to replace older obsolete office space. This factor is applied to SANDAG's projected countywide employment growth in office-related industries to forecast demand for occupied office space over time. Total supply demanded is estimated allowing for a structural vacancy rate of 7 percent.

Table V-2 presents projected demand for total office space, including owner-occupied or build-to-suit space other than hospitals and government buildings. South County's share of countywide demand is expected to grow over time given its growing share of regional population and employment, and the approaching build-out of other business park locations in the region. The low-demand estimate assumes that South County's capture of regional growth will increase over the next 25 years, reaching 7 percent of the market's growth from 2020-2030 (compared to 1.9 percent of the countywide inventory today). Some of this demand for office space may be filled by new business park locations as well as more urban locations. The moderate and high-demand scenarios assume more aggressive and accelerated growth rates of South County's market share, anticipating that pent-up demand, the growing population base in South County, economic growth in Mexico, and regional traffic congestion will provide greater incentive for new employment space in South County, reaching 15-20 percent of countywide growth between 2020 and 2030.

Office is a flexible land use that can adjust to changing land values and growing demand with increases in density. Consequently, unlike industrial space, there will continue to be significant regional capacity for additional office development in sub-markets that are competitive because

of their central locations in the region, their proximity to the region's tech industry clusters, their existing critical mass, and their ability to redevelop to higher densities.

Given these assumptions, South County's share of total countywide office supply would equal approximately 2.8 to 5.1 percent by 2030, compared to 1.9 percent today.

Chula Vista is and should continue to be the dominant office location within South County. Chula Vista's share of South County demand is estimated for low to high scenarios, with the low scenario based approximately on Chula Vista's existing share of South County office space. From 2000 to 2030, total office space demanded in Chula Vista is estimated to range from 0.9 to 3.2 million square feet, with a moderate scenario of 2.1 million square feet, including multi-tenant space, owner-occupied space, and medical office space, but excluding hospitals and government space. This is in addition to Chula Vista's year 2000 office space supply, and would place Chula Vista's 2030 supply near today's supply in East County (under the low scenario), Rancho Bernardo/Scripps Ranch (under the moderate scenario), and University City (under the high scenario).

Unlike University City, the office space supply in Chula Vista would be distributed among several areas, in particular the Bayfront, Downtown (primarily within the Urban Core), and the Eastern Urban Center in Otay Ranch. Table V-3 presents a possible allocation of citywide demand among the major potential office locations within the city – Bayside, Downtown, EUC/Otay Ranch, and elsewhere – based on the Moderate and High scenarios. Downtown and the EUC (Eastern Urban Center) are envisioned as the dominant office locations within the city, but the Bayside may be quite competitive given its waterfront location. The Bayside, however, has limitations on allowable uses within the State Tidelands Trust and strong demand for other public and commercial recreation uses that may limit it potential office development capacity.

As shown, based on reasonable allocation assumptions, the Urban Core may expect to absorb approximately 750,000 to 1.1 million square feet of office space by 2030, in addition to existing supply, under the Moderate to High scenarios. The potential amount demanded would be less under a Low scenario, but planning policy should not unduly constrain potential upside growth if the more optimistic scenarios materialize.

Table V-1 San Diego County Employment Based Office Space Projections, 2000 to 2030

1990-2000 Trends(1):			Occupied GLA	Occupied GLA Avg. Annual	
Yr.	Total GLA	Occupied GLA	Total Increase	Increase	CAGR
1990	35,067,159	27,808,257			
2000	40,889,421	38,436,056	10,627,799	1,062,780	3.3%

	Assumed % Using Office	2000	2010	2020	2030
Employment (SIC Categories)					
FIRE	100%	69,501	81,759	95,641	107,216
Manufacturing	3%	3,876	3,497	3,505	3,555
Self Employed and Domestic	10%	8,938	9,831	10,828	11,867
Services	34.0%	135,729	156,780	179,914	204,169
Transportation, Comm. & Pub. Util.	10.0%	5,080	5,588	6,068	6,913
Total		223,124	257,454	295,956	333,720
Increase in Office Employment By Period		71,218	34,330	38,502	37,764
Assumed Occupied Office Space / Empl.		249	249	249	249
Total Increase in Leasable Office Space Demand By Period from Employment Growth		10,627,799			
Factor for Owner-occupied/Build-to-suit buildings (3)		1.67			
Total Increase in Leasable & Owner-Occupied Office Space Demand By Period from Employment Growth		17,748,424	8,555,622	9,595,222	9,411,253
Total Supportable Space Allowing for Structural Vacancy of:			9,199,594	10,317,443	10,119,626
Annual Average Increase in Supportable Office Space Supply By Period			919,959	1,031,744	1,011,963
Total Leasible and Owner-Occupied Space at End of Period		82,142,777	91,342,371	101,659,814	111,779,440
Cumulative Increase in Supportable Office Space Supply 2000-2030			9,199,594	19,517,037	29,636,663

Notes:
(1) Torto Wheaton Research, A CB Richard Ellis Buinsess Unit; Sedway Group
(2) Per SANDAG's 2030 Projections
(3) Based on Co-Stars 2004 inventory of 82m s.f., including owner-occupied space
(except government & hopsitals) vs. CB Richard Ellis' inventory of 49.2m of rentable space

Source: Economics Research Associates

Table V-2 Projected Demand for Office Space in San Diego County and Chula Vista 2000 to 2030

	2010	2020	2030
Countywide			
Estimated Increase in Lesable Office Space During Previous 10 Years	9,199,594	10,317,443	10,119,626
South County Capture Rate Scenarios			
Low Scenario	3.0%	5.0%	7.0%
Moderate Scenario	5.0%	10.0%	15.0%
High Scenario	7.0%	13.0%	20.0%
South County Space Demand for Period			
Low Scenario	275,988	515,872	708,374
Moderate Scenario	459,980	1,031,744	1,517,944
High Scenario	643,972	1,341,268	2,023,925
South County Cummulative Space			
Low Scenario	275,988	791,860	1,500,234
Moderate Scenario	459,980	1,491,724	3,009,668
High Scenario	643,972	1,985,239	4,009,164
Chula Vista as Percentage of South Suburban			
Chula Vista Capture Rate Scenarios			
Low Scenario	60.0%	60.0%	60.0%
Moderate Scenario	70.0%	70.0%	70.0%
High Scenario	80.0%	80.0%	80.0%
Chula Vista Space Demand for Period			
Low Scenario	165,593	309,523	425,024
Moderate Scenario	321,986	722,221	1,062,561
High Scenario	515,177	1,073,014	1,619,140
Chula Vista Cummulative Space			
Low Scenario	165,593	475,116	900,140
Moderate Scenario	321,986	1,044,207	2,106,768
High Scenario	515,177	1,588,191	3,207,332

Source: Economics Research Associates

Table V-3 Assumed Distribution of Office Space Demand in Chula Vista 2000-2030

	%	2010	%	2020	%	2030
Cumulative Office Space						
Moderate Scenario:	100%	322,000	100%	1,044,000	100%	2,107,000
Bayside	10%	32,200	15%	157,000	23%	485,000
Downtown	40%	128,800	40%	417,600	35%	737,000
EUC/Otay Ranch/EastLake	45%	144,900	40%	417,600	40%	843,000
Elsewhere	5%	16,100	5%	52,000	2%	42,000
High Scenario:	100%	515,000	100%	1,588,000	100%	3,207,000
Bayside	10%	51,500	15%	238,000	23%	738,000
Downtown	45%	231,750	40%	635,200	35%	1,122,000
EUC/Otay Ranch/EastLake	45%	231,750	40%	635,200	40%	1,283,000
Elsewhere	5%	25,750	5%	79,000	2%	64,000

Source: Economics Research Associates

Retail Demand

The Urban Core has access to several potential consumer markets, including local and out-of-area households, downtown area employees, overnight visitors and cross border shoppers. Retail support attributed to downtown area employees follows the current General Plan allocation of space at build-out.

Table V-4 through Table V-6 presents estimated retail sales from the primary, secondary, and tertiary resident markets based on estimated household buying power in each market and assumed capture rates for different types of retail centers. The estimated number of future households in the resident market areas are based on existing forecasts, which are based on existing land use plans. If these plans change to add more residents, the estimate of buying power, and therefore supportable retail space would be proportionately greater.

The share of total sales by shopping center type was assigned based on expenditures in San Diego County. Additionally, ERA assumed capture rates by store type, which varies by type of center and market analyzed. The closer the market area to the Urban Core, the higher the capture rate assumed.

Table V-7 shows potential retail support from other sources, including downtown employees, cross border traffic and overnight visitors. For the employee component, the average daily retail spending was assumed at $4.00. It is assumed that supportable sales-per-SF for new retail development is $300. Downtown retail is assumed to capture 25 percent of cross border expenditures in Chula Vista, which in turn is assumed to capture 20 percent of total cross border expenditures in San Diego County. For overnight visitors, ERA assumed hotel occupancy rates at 60 percent and average retail expenditures per room night of $25.00

Table V-8 provides a final summary of supportable retail space from residents, downtown employees, cross border traffic and overnight visitors. It is assumed that the Urban Core would capture 85 percent of supportable space for the Chula Vista downtown area, or 2.3 million square feet of gross leasable retail space, including existing retail space within the Urban Core, such as Chula Vista Shopping Center, 3rd Avenue, E Street, H Street, and Broadway.

The City has particular interest in support for restaurants within the Urban Core, especially higher-end restaurants. In response to this particular interest, ERA projected the number of households required to support 20,000 square feet of eating and drinking space considering $1,467 average annual eating and drinking sales per household for San Diego County and average sales per square foot of $312. The households needed to support 20,000 square feet of restaurant space (a cluster of 3-4 restaurants) at various capture rates are as follows:

Capture Rate	Households Needed
100 %	4,259
50 %	8,518
10 %	42,588
5 %	85,176

If the restaurants achieved higher than average sales per square foot, the number of households required would be more at each capture rate assumption. It is important to note that in the highly competitive San Diego regional market, no specific restaurant cluster will attract 100 percent, or event 50 percent, of household dining and drinking expenditures. The number of households needed in the market area under a 5 to 10 percent capture rate scenario is probably closer to reality for a specific restaurant cluster.

Table V-4 Chula Vista Potential Retail Sales 2030: Downtown Residents (Primary Market) Resident Market Support Based on the Existing General Plan

Coutywide Expenditure/HH		$ 20,401					
Countywide Avg. HH Income		$ 69,805					
Market Area Avg. HH Income		$ 51,629					
Market Area Exp./HH Income Relative to Countywide Average		80.6%					
Market Area Exp./HH Income		$ 16,441					
Households (2030)		20,504					
		Super Regional Center	**Regional Center**	**Community Center**	**Neighborhood Center**	**Other**	**Total**
Share of Total Sales		10.8%	12.1%	21.0%	17.5%	38.6%	100.0%
Distribution/Household		$ 1,779	$ 1,993	$ 3,448	$ 2,875	$ 6,346	$ 16,441
Capture Rate/Store Type		40.0%	40.0%	70.0%	90.0%	70.0%	--
Captured Sales/Household		$ 711	$ 797	$ 2,414	$ 2,587	$ 4,442	$ 10,952
Total Captured Sales ($000s)		$ 14,587	$ 16,345	$ 49,494	$ 53,048	$ 91,083	# $ 224,557
Sales/s.f. (by center type)		$ 258	$ 254	$ 269	$ 323	$ 300	--
Supportable GLA (s.f.)		56,585	64,264	183,706	164,215	303,611	772,382
Supportable Acreage @ FAR	0.3	4.33	4.92	14.06	12.57	23.23	**59.10**

Source: Economics Research Associates.

Table V-5 Chula Vista Potential Retail Sales 2030: Rest of Chula Vista Excluding Downtown (Secondary Market) Resident Market Support Based on the Existing GP

Coutywide Expenditure/HH		$ 20,401					
Countywide Avg. HH Income		$ 69,805					
Market Area Avg. HH Income		$ 64,332					
Market Area Exp./HH Income							
Relative to Countywide Average		94.6%					
Market Area Exp./HH Income		$ 19,309					
Households (2030)		68,435					
		Super Regional Center	**Regional Center**	**Community Center**	**Neighborhood Center**	**Other**	**Total**
Share of Total Sales		10.8%	12.1%	21.0%	17.5%	38.6%	100.0%
Distribution/Household		$ 2,089	$ 2,341	$ 4,050	$ 3,376	$ 7,453	$ 19,309
Capture Rate/Store Type		25.0%	25.0%	15.0%	10.0%	10.0%	--
Captured Sales/Household		$ 522	$ 585	$ 608	$ 338	$ 745	$ 2,798
Total Captured Sales ($000s)		$ 35,737	$ 40,045	$ 41,574	$ 23,105	$ 51,006	# $ 57,365
Sales/s.f. (by center type)		$ 258	$ 254	$ 269	$ 323	$ 300	--
Supportable GLA (s.f.)		138,632	157,446	154,311	71,524	170,020	691,932
Supportable Acreage @ FAR	0.3	10.61	12.05	11.81	5.47	13.01	**52.95**

Source: Economics Research Associates.

Table V-6 Chula Vista Potential Retail Sales 2030: Rest of San Diego County (Tertiary Market) Resident Market Support Based on the Existing GP

Estimated Tertiary Market Capture (2003)	$	654	Million (from ERA's Fiscal Impact analysis)
Projected Countywide HH Growth		1.09%	annually between 2000-2030 (excluding Chula Vista)
Potential Tertiary Market Capture in Chula Vista (2030)	$	876	Million
Tertiary Market Capture (2030) adjusted for Vehicle purchases (less 12%)	$	771	
Downtown Share of Citywide Retail Land Inventory at buildout		24.5%	
Estimated Regional Capture in Downtown (2030)	$	214	Million
Supportable GLA (s.f.) @ $300/s.f.		714,463	
Supportable Acreage @ FAR 0.3		**54.67**	

Source: Economics Research Associates.

Table V-7 Downtown Chula Vista: Potential Retail Support from Other Sources (2030)
Based on the Existing General Plan

Retail Support Attributed to Downtown Area Employees				
Land Use at Buildout		Acres	Est. Employee/acre	Employees
Office Commercial	CO	81.3	76.7	6,231
Retail Commercial	CR	218.4	20.5	4,486
Thoroughfare Commercial	CT	66.9	10.5	699
Visitor Commercial	CV	22.5	14.0	315
Resort/Recreational	RES	-	22.3	-
General Industrial	I	-	12.1	-
Research & Limited Industrial	IL	94.9	24.0	2,274
Public/Quasi-Public Uses	PQ	211.5	6.0	1,269
Total Employment				15,274
Average Annual Workdays		235		
Average Daily Employee Spending		$4.00		
Total Annual Expenditure		$14.4	Million	
Estimated Supportable Sales/s.f.		$300		
Estimated Supportable GLA (s.f.)		47,859	s.f.	
Estimated Supportable Acreage @ FAR	0.30	**3.66**	**Acres**	

Retail Support Attributed to Cross-Border (Mexican) Traffic - excluding workers and tourists				
Estimated countywide cross border retail expenditure (2003):				
Gross Retail Exp.		$ 1,917.3	Million	
Estimated Capture in Chula Vista	20%	$383.5	Million	
Estimated Downtown Capture (2003)	25%	$95.9	Million	
Estimated Mexican Exp. Growth (2003-2030)		0.5%	Annually	
Estimated Mexican Retail Exp.in Downtown (2030)		$109.7	Million	
Estimated Supportable Sales/s.f.		$300		
Estimated Supportable GLA (s.f.)		365,619	s.f.	
Estimated Supportable Acreage @ FAR	0.30	**27.98**	**Acres**	

Retail Support Attributed to Overnight Visitors (Hotel Rooms)				
Developed Visitor Commercial (CV) Acres		22.5	acres	
Estimated Existing Rooms/developed acre		22	rooms/acre	
Estimated Total Rooms		497	rooms	
Annual room-nights @ occupancy of	60%	108,771	room nights	
Avg. retail expenditure/room night		$ 25.00	/room-night	
Estimated taxable retail sales attributed to hotel rooms		$ 2.72	Million	
Estimated Supportable Sales/s.f.		$300		
Estimated Supportable GLA (s.f.)		9,064	s.f.	
Estimated Supportable Acreage @ FAR	0.30	**0.69**	**Acres**	

Source: Economics Research Associates.

Table V-8 Supportable Retail Space in Downtown Chula Vista (2030) Under the Existing General Plan

	Area (s.f.)	Acres
Resident Market		
Primary Market Support	772,382	59.1
Secondary Market Support	691,932	52.9
Tertiary Market Support	714,463	54.7
Subtotal	**2,178,777**	**166.7**
Other retail Sources		
Area Employees	47,859	3.7
'Cross-Border' Shoppers	365,619	28.0
Other overnight visitors	9,064	0.7
Subtotal	**422,542**	**32.3**
Urban Core Capture of Downtown Area	**85%**	
TOTAL	**2,211,121**	**169.2**

Source: Economics Research Associates

Housing Demand

Table V-9 presents projected housing demand for the Urban Core in 2010, 2020 and 2030. To calculate the demand, ERA obtained SANDAG's projected net growth figures for the 2000-2010, 2010-2020 and 2020-2030 periods for SRA-21 (western Chula Vista) and the South Suburban Major Statistical Area. SRA-21's share of the South Suburban MSA's projected net growth is the basis for the low demand scenario. Even though SRA-21's share of the South Suburban MSA's household growth increased significantly from 2 percent (between 2000 and 2010) to 6 percent (between 2010 and 2020) to 17 percent (between 2020 and 2030), absolute increases in households for SRA-21 did not vary greatly, since, according to SANDAG's forecasts, South Suburban's net growth share of San Diego County growth is forecasted to decrease greatly after 2020.

Medium and High scenarios assumed that SRA-21 will capture a higher than projected share of total household growth in the South Suburban MSA, assuming that the City of Chula Vista implements policies that facilitate redevelopment and infill development, and increases the Urban Core's potential development capacity. ERA assumed that the Urban Core might capture half of all future growth in SRA-21, with remaining growth occurring in the Bayfront and elsewhere within downtown and western Chula Vista. This percentage is consistent with expected growth in the Chula Vista Bayfront, considering that some of the growth in the Bayfront would come from households that otherwise would not live in the area.

Total cumulative housing projections by 2030 in the Urban Core estimate almost 1,098 new households in the low scenario, more than 1,924 in the medium scenario and 2,749 in the high scenario.

Table V-10 shows single and multiple family housing units for the Urban Core Study Area in 2010, 2020 and 2030. ERA assumed 30 percent of all future housing units to be single-family units and 70 percent to be multiple housing units. Single-family housing within the Urban Core may include small lot single-family homes, as found in downtown Oceanside, or attached town homes, as found in San Diego's Uptown Community Plan area. Multi-family housing may include ownership and rental multi-level housing at various densities and heights within the Urban Core.

Table V-9 Chula Vista Urban Core Study Area Housing Demand for 2010, 2020 and 2030

	2000	2004	2010	2020	2030
South Suburban MSA Households					
Total Households	94,080	108,083	121,787	135,377	139,522
South Suburban Housing Net Growth					
Total Households			27,707	13,590	4,145
SRA 21 Households					
Total Households	37,694	38,397	38,373	39,205	39,890
SRA-21Housing Net Growth					
Total Households			679	832	685
SRA 21 Net Growth as a Percentage of South Suburban Net Growth					
Low Scenario			2%	6%	17%
Moderate Scenario			5%	11%	23%
High Scenario			8%	15%	30%
Estimated SRA 21 Household Growth					
Low Scenario			679	832	685
Moderate Scenario			1,448	1,435	964
High Scenario			2,217	2,039	1,244
Urban Core Household Growth Per Period @ 50% of SRA 21 Growth					
Low Scenario			340	416	343
Moderate Scenario			724	718	482
High Scenario			1,108	1,019	622
Cumulative Urban Core Household Growth					
Low Scenario			340	756	1,098
Moderate Scenario			724	1,442	1,924
High Scenario			1,108	2,128	2,749

Source: SANDAG and Economics Research Associates

Table V-10: Estimated Single and Multiple Family Housing Demand in the Chula Vista Urban Core Study Area for 2010, 2020 and 2030

	2010	2020	2030
Urban Core Single Family Housing Demand @ 30 Percent of Estimated Urban Core Demand			
Low Scenario	102	125	103
Moderate Scenario	217	215	145
High Scenario	332	306	187
Cumulative Urban Core Single Family Housing Demand			
Low Scenario	102	227	329
Moderate Scenario	217	432	577
High Scenario	332	638	825
Urban Core Multi-Family Housing Demand @ 70 Percent of Estimated Urban Core Demand			
Low Scenario	238	291	240
Moderate Scenario	507	502	337
High Scenario	776	713	435
Cumulative Urban Core Multi-Family Housing Demand			
Low Scenario	238	529	769
Moderate Scenario	507	1,009	1,347
High Scenario	776	1,489	1,924

Source: SANDAG and Economics Research Associates

Scenario 2 – Continued South Suburban MSA Growth

SANDAG's household forecasts for the South Suburban MSA assume a significant tapering of growth in each decade from 2000 to 2030. SANDAG assumes a 2.6 percent annual growth rate between 2000 and 2010, falling to 1.1 percent from 2010 to 2020, falling to 0.30 percent from 2020 and 2030. Some decline in the annual growth rate is expected as the household base in the South Suburban MSA increases. However, the decline is faster than the decline assumed countywide. SANDAG's forecasts may assume that growth in the South Suburban MSA will fall dramatically as Otay Ranch approaches build-out.

If the communities in the South Suburban MSA increase their potential build-out capacity, South Suburban MSA's household growth rates should not decline so rapidly. There is no reason to assume that the South Suburban MSA would be less appealing between 2020 and 2030 than it is prior to 2020 if capacity is increased unless infrastructure and public facility standards are not maintained.

It is reasonable to assume that build-out capacity in the South Suburban MSA will increase. Chula Vista is contemplating such increases as it updates its General Plan, including within the Eastern Urban Center, Downtown, and the upland portions of the Bayfront. The City of San Diego is considering adding housing capacity to the Otay Mesa Community Plan. San Ysidro and National City redevelopment efforts contemplate new urban housing capacity. While most of these changes in policies that will increase housing capacity have not yet been approved, it is likely that some will be approved given the regional housing affordability issue.

Assuming that household growth in the South Suburban MSA continues between 2020-2030 at the same rate as SANDAG forecasts for the 2010-2020 period, and that the Urban Core can capture a significant share of this growth, the Urban Core might accommodate over 1,500 to over 3,600 new housing units between 2000 and 2030, as presented in Table V-10, of which most would be multi-family housing given land prices, as estimated in Table V-11.

Table V-10 Chula Vista Urban Housing Demand for 2010, 2020 and 2030
(Second Scenario – Assuming 2010-2020 Growth Rate Continues Between 2020-2030)

	2000	2004	2010	2020	2030
South Suburban MSA Households					
Total Households	94,080	108,083	121,787	135,377	150,483
South Suburban Housing Net Growth					
Total Households			27,707	13,590	15,106
SRA 21 Net Growth as a Percentage of South Suburban Net Growth					
Low Scenario			2%	6%	10%
Moderate Scenario			5%	11%	15%
High Scenario			8%	15%	20%
Estimated SRA 21 Household Growth					
Low Scenario			679	832	1,511
Moderate Scenario			1,448	1,435	2,266
High Scenario			2,217	2,039	3,021
Urban Core Household Growth Per Period @ 50% of SRA 21 Growth					
Low Scenario			340	416	776
Moderate Scenario			724	718	1,133
High Scenario			1,108	1,019	1,511
Cumulative Urban Core Household Growth					
Low Scenario			340	756	1,532
Moderate Scenario			724	1,442	2,575
High Scenario			1,108	2,128	3,639

Source: SANDAG and Economics Research Associates

Table V-11 Single and Multiple Family Housing Demand in the Chula Vista Urban Core Study Area for 2010, 2020 and 2030
(Second Scenario – Assuming 2010-2020 Growth Rate Continues Between 2020-2030)

	2000	2004	2010	2020	2030
Urban Core Single Family Housing Demand @ 30 Percent of Estimated Urban Core Demand					
Low Scenario			102	125	233
Moderate Scenario			217	215	340
High Scenario			332	306	453
Cumulative Urban Core Single Family Housing Demand					
Low Scenario			102	227	460
Moderate Scenario			217	432	772
High Scenario			332	638	1,091
Urban Core Multi-Family Housing Demand @ 70 Percent of Estimated Urban Core Demand					
Low Scenario			238	291	543
Moderate Scenario			507	502	793
High Scenario			776	713	1,058
Cumulative Urban Core Multi-Family Housing Demand					
Low Scenario			238	529	1,072
Moderate Scenario			507	1,009	1,802
High Scenario			776	1,489	2,547

Source: SANDAG and Economics Research Associates

Urban Core Capacity

Estimated build-out capacity for residential, retail and office space in the Urban Core under the proposed General Plan update is presented in Table V-12, based on data provided by the City of Chula Vista. The table also presents total existing land uses in 2004 and the development capacity for new incremental growth.

Table V-12 Urban Core Plan Capacity for New Incremental Growth

	Residential Units	Retail S.F.	Office S.F.
Build-out Capacity	10,865	4,795,712	2,936,818
Total Existing Land Use 2004	5,036	2,990,978	2,377,766
Development Capacity for New Incremental Growth	5,829	1,804,734	559,052

As shown in the table, existing residential units in 2004 represent only 46 percent of the Urban Core's total capacity at build-out, which leaves capacity for over 5,800 units in the Urban Core.

Estimated retail space in the Urban Core in 2004 represents approximately 62 percent of the total capacity at build-out, which leaves around 1.8 million square feet of retail space to be developed.

Estimated office space in the Urban Core in represents almost 81 percent of the total build-out capacity, leaving 560,000 square feet for new development.

Table V-13 compares development capacity for residential, retail and office space in the Urban Core with estimated demand projected by ERA.

Table V-13 Growth Capacity vs. Estimated Demand (2004-2030)

	Residential Units	Retail S.F.	Office S.F.
Development Capacity for New Incremental Growth	5,829	1,804,734	559,052
Estimated Demand (1) (2004-2030, High Scenarios)	3,639	530,536	1,122,000
Net Surplus <Deficit> Capacity at 2030	2,190	1,274,198	(562,948)

Based on this comparison, it appears that the Urban Core plan, as currently planned, may have additional capacity for residential and retail development, and perhaps insufficient capacity for potential office development. The extra residential and retail capacity could be considered upside potential for additional growth if market forecasts prove too conservative. It may also represent additional capacity beyond the year 2030. It appears, however, that the City has the flexibility of considering some re-allocation of uses if it so chooses. In particular, the City may want to designate that some of the commercial-retail capacity would be mixed-use commercial that could be developed either as commercial retail or commercial office space. This would help address the potential shortfall in office space capacity.

Given the long term housing needs in the region, the housing capacity should not be reduced necessarily since it will be needed someday as the region continues to grow, unless a reduction is required to address other planning objectives and policies. However, infrastructure and public facility financing strategies may want to anticipate that not all of this capacity will be built by 2030.

Financial Feasibility Issues

The amount of revenue a property can generate relative to increases in costs must be greater to induce private redevelopment and renovation, without public subsidies. Rents and home prices, and densities, will have to be greater to generate this additional revenue.

How parking is addressed, in terms of standards (such as reducing standards near transit or allowing shared parking standards for mixed-use development), location (forming parking districts that can pool parking in-lieu fees to provide serviceable off-site parking at a lower cost due to economies of scale), and type (ensuring parking development costs are commensurate with achievable rents) is important.

Another major issue that will affect feasibility is the ultimate impact fee costs, given the potentially higher cost of providing public facilities in an existing community to serve the additional population.

If the Urban Core Plan's allowable densities requires subterranean parking, rents and home prices per square foot will have to be even greater to afford the high cost of subterranean parking. A Keyser Marston Associates (KMA) study for the City of Chula Vista that tested the residual value of alternative forms of housing at different densities concluded that townhomes and mid-rise condominium development currently are the most feasible housing prototype, supporting current estimates of acquisition costs for improved properties in western Chula Vista. The feasibility of

high-rise condominium development appeared low because of the higher costs relative to prices, although a relatively modest increase in high-rise price assumptions (which the Chula Vista Urban Core could evolve into) would make high-rise development feasible. KMA concluded that rental rates currently are too low to support increases in land values and construction costs.

Building upon KMA's analysis and using similar impact fee factors, ERA evaluated three hypothetical mixed-use housing and retail scenarios on 50,000 square foot lots, and applying the draft development standards prepared by RRM Associates. The first two scenarios were variations of mixed-use development within the V-2 Village area. The first scenario, V-2-A, assumes that development maximizes the allowed floor-area ratio (FAR), necessitating subterranean parking. The second scenario, V-2-B, assumes that only one level of lower cost tuck-under parking (half level below grade and half above grade, utilizing natural ventilation) is developed and the number of residential units is limited by the parking supply. Both of these scenarios assume that commercial parking requirements is satisfied off-site through parking in-lieu fees. The third scenario, V-12, assumes a high-rise, transit-oriented, mixed-use development were all parking is placed on site. Theses analyses are presented in Appendix A.

The estimated residual land values that these scenarios may support are as follows:

Scenario	**Residual Land Value Per S.F. of Land Area**
V-2A: FAR Capacity	$21
V-2B: Parking Constrained	$71
UC-12: Transit-Oriented High-Rise	$22

There are limited land sales in the Urban Core against which to compare with the estimated residual values since the Urban Core's land is mostly developed. Since 2003, the median price of commercial retail land in Chula Vista was $15.90 per square foot, and the median price for residential land was $39 per square foot. There were only a couple of commercial land sales within the Urban Core, averaging $56 per square foot. KMA reports prices for lower density residential developments (20 units per acre or less) of $10 per square foot, a sale price of $20 per square foot for a site forming a portion of the proposed Esplanade condominium on H Street, and a median sales price for commercial sites in urban South Bay of $22 per square foot, with the highest value site in Downtown Chula Vista.

While the residual land values estimated are comparable for higher density residential and commercial land in the urban areas of South Bay, only the Parking Constrained scenario generates sufficient value to recover the cost of property acquisition that includes land and existing improvements (assuming under-performing and obsolete buildings), which is the more common scenario within the Urban Core. KMA reports median sales prices for improved

properties in urban South Bay range from $41 to $63 per square foot of land area, considerably higher than unimproved land.

The reason the Parking Constrained scenario performs better is that the high cost of subterranean parking is avoided. The UC-12 scenario, the Transit-Oriented High Rise Scenario, also must compensate for higher construction costs per unit associated with high-rise development. While a 10 percent average premium per square foot was assumed for the high-rise development, a greater view premium would be required to compensate for the extra development costs.

Based on this analysis, the City should strive to improve the feasibility of private redevelopment by doing the following:

- Strive to reduce the impact fee cost burden on development through efficient infrastructure planning, and the use of public funds (such as redevelopment funds) to cover some of the costs of infrastructure and public facility provision;

- Reduce parking in-lieu fees by developing district parking as a public/private partnership, and/or base fees on the provision of common surface lots, rather than structured parking.

These measures are particularly important in the early phases of the Urban Core's redevelopment. Overtime, as prices and rents rise in real terms relative to construction costs, the residual land value of development will rise and the ability for private parties to purchase existing properties, without subsidy will improve, as will development's capacity to absorb higher parking and impact fee costs.

VI. SWOT Analysis

This section provides an outlook of the Urban Core's strengths, weaknesses, opportunities, and threats from a market and economic perspective. The Urban Core should build-upon its strengths, overcome or mitigate its weaknesses, exploit its opportunities, and monitor its threats as it develops in the future.

Strengths

- Location between downtown San Diego and Tijuana
- Strong and established retail market
- Proximity to the Bay
- Established employment, retail, and residential center with high occupancy
- Public investment in infrastructure
- Quality entry-level and mid-market rate ownership housing
- Transit linkages
- Traditional downtown district
- Good regional access

Weaknesses

- Relatively lower incomes
- Limited visitor industry
- Low hotel room rates and occupancy rates
- Aging building stock
- Relatively lower rents
- Public facility deficiencies
- Relatively neutral regional market image
- Relatively weak linkage with the Bayfront

Opportunities

- Affordable development relative to downtown San Diego
- Ability to capture a larger share of housing demand than SANDAG forecasts
- An alternative urban lifestyle than downtown San Diego
- Coastal view development and links to the Bayfront
- Pedestrian and transit-oriented development
- Intercept Mexican market consumers
- Become South County's office employment, retail, and entertainment center
- Housing for many incomes, preferences, and cultures

Threats

- Competition from other mixed-use urban nodes in the region
- Competition from Bayfront development if not linked with core
- Competition from the Eastern Urban Center if not adequately distinguished
- Cost and complexity of land assembly and infill development
- Infrastructure and public facility constraints
- Not overcoming "second tier" reputation in regional market
- Exposure to Mexican currency fluctuations

Concentrating efforts in keystone districts within the Urban Core to show success and generate some critical mass, rather than dilute efforts with individual scattered developments, may be important for generating momentum and long-term success, so that people choose to live, shop, and work in the Urban Core because of its own distinct identity.

Appendix A

Table 1
First Scenario - FAR Capacity

V-2A VILLAGE ASSUMPTIONS

Lot Size	**50,000**
Maximum Coverage	**90%**
Lot Available for Construction	**45,000**

Floor Area Ratio	**3**
Maximum Construction SF	**150,000**

Square Feet Breakdown	**Percentage**	**SF**
- Residential	**70%**	**105,000**
- Retail	**20%**	**30,000**
- Office	**10%**	**15,000**

Parking Spaces	**Zoning Reg.**	**Spaces**
- Onsite Residential *	**1.5**	**143**
- Offsite Commercial	**3**	**135**

*** 1.5 parking spaces per residential unit**
*** Capacity of 121 parking spaces per underground parking level**

Source: Economics Research Associates

Table 2
First Scenario - FAR Capacity

V-2A VILLAGE ESTIMATED REVENUES FROM RESIDENTIAL PROPERTY SALE

Unit Type	Total Residential SF	Average Size per Unit	# of Units	Square Footage Per Unit	Price Per Unit	Price Per Square Foot	Total Sales Revenue
Condominium Units	105,000	1,100	95	1,100	$313,500	$285.00	$29,782,500
Total			**95**				**$29,782,500**

Residential Revenue		
Total Sales		$29,782,500
Cost of Sale	4%	($1,191,300)
Net Residential Revenue		**$28,591,000**
Revenue per SF		**$272**

Source: Economics Research Associates.

Table 3
First Scenario - FAR Capacity

V-2A VILLAGE ESTIMATED COMMERCIAL SPACE REVENUE

Leasable Retail SF			30,000	SF
Leasable Office SF			15,000	SF
Total Leasable SF			45,000	SF
NNN Monthly Retail Rental Rate		$	1.75	per month
NNN Monthly Office Rental Rate		$	2.00	per month
Gross Retail Annual Rental Income			$630,000	
Gross Office Annual Rental Income			$360,000	
Total Gross Annual Rental Income			$990,000	
Less Vacancy & Collection	5%	$	(49,500)	
Gross Effective Income			$940,500	
Non-reimbursable operating expenses	4%		(37,620)	
Net Operating Income			$902,880	
Cap Rate			9%	
Estimated Capitalized Value			**$10,032,000**	
Capitalized Value per SF			**$223**	

Source: Economics Research Associates

Table 4
First Scenario - FAR Capacity

V-2A VILLAGE DEVELOPMENT COSTS

Project Square Footage

Retail	30,000
Office	15,000
Residential for Sale	105,000

Underground Parking (Residential Spaces only) 143 2 underground parking levels

	Total	Per SF	Per Space	Per Unit	% of Total
Direct Costs					
Direct Costs, Retail /1	$2,880,000	$96			8.6%
Direct Costs, Office /1	$2,025,000	$135			6.0%
TI Allowance	$900,000	$20			2.7%
Direct Costs, Residential /1	$11,970,000	$114			35.7%
Direct costs, Underground Parking	$3,562,500			$25,000	10.6%
Subtotal Direct Costs	**$21,337,500**				63.6%
Commercial Parking Fee	**$2,193,750**		$13,000		6.5%
Soft Costs					
Developer Overhead 2/	$853,500				2.5%
Residential Open Space Fee	$950,000			$10,000	2.8%
Commercial and Residential Fees 3/	$2,336,814				7.0%
Financing Costs /4	$1,920,375				5.7%
Architectural & Engineering 5/	$640,125				1.9%
Miscelaneous (Legal and Other)	$250,000				0.7%
Subtotal Indirect Costs	**$6,950,814**				20.7%
Contingency 6/	**$3,048,206**				9.1%
Total Development Cost (excluding land)	**$33,530,271**				100.0%

1/ Includes site improvements, demolition, construction cost, contingency, etc.
2/ Based on 4% of Subtotal Direct Costs
3/ Includes Public Facility, Sewer, Park, Plan Check, Building Permit, School and Water Capacity Fees
4/ Based on 9% of Subtotal Direct costs
5/ Based on 3% of Subtotal Direct Costs
6/ Based on 10% of Subtotal Direct Costs, Commercial Parking Fee and Subtotal Indirect Costs

Source: Economics Research Associates

Table 5
First Scenario - FAR Capacity

V-2A VILLAGE FINANCING ESTIMATE

Revenues		**Amount**
For-sale Housing Revenue		$28,591,000
Capitalized Value of Retail Rental Property		$10,032,000
Total Sources of Revenue		**$38,623,000**
Costs		
Direct Costs		$21,337,500
Commercial Parking Fee		$2,193,750
Indirect Costs (Soft Costs, Financing & Fees)		$6,951,000
Contingency		$3,048,000
Total Costs Excluding Land		**$33,530,250**
Developer Profit	12%	$4,023,630
Total Costs Excluding Land		**$37,553,880**
NET		**$1,069,120**
Residential Value per SF of Land		**$21.4**

Source: Economics Research Associates

Table 6
Second Scenario - Parking Constrained

V-2B VILLAGE ASSUMPTIONS

Lot Size	**50,000**
Maximum Coverage	**90%**
Lot Available for Construction	**45,000**

Floor Area Ratio	**3**
Maximum Construction SF	**150,000**

Square Feet Breakdown	**Percentage**	**SF**
- Residential	**70%**	**105,000**
- Retail	**20%**	**30,000**
- Office	**10%**	**15,000**

Parking Spaces	**Zoning Reg.**	**Spaces**
- Onsite Residential *	**1.5**	**121**
- Offsite Commercial	**3**	**135**

*** 1.5 parking spaces per residential unit**
*** Capacity of 121 parking spaces per tuckunder parking level**

Source: Economics Research Associates

Table 7
Second Scenario - Parking Constrained

V-2B VILLAGE ESTIMATED REVENUES FROM RESIDENTIAL PROPERTY SALE

Unit Type	Total Residential SF	Average Size per Unit	# of Units	Square Footage Per Unit	Price Per Unit	Price Per Square Foot	Total Sales Revenue
Condominium Units	89,100	1,100	81	1,100	$313,500	$285.00	$25,393,500
Total			**81**				**$25,393,500**

Residential Revenue		
Total Sales		$25,393,500
Cost of Sale	4%	($1,015,740)
Net Residential Revenue		**$24,378,000**
Revenue per SF		**$274**

Source: Economics Research Associates.

Table 8
Second Scenario - Parking Constrained

V-2B VILLAGE ESTIMATED COMMERCIAL SPACE REVENUE

Leasable Retail SF			30,000	SF
Leasable Office SF			15,000	SF
Total Leasable SF			45,000	SF
NNN Monthly Retail Rental Rate		$	1.75	per month
NNN Monthly Office Rental Rate		$	2.00	per month
Gross Retail Annual Rental Income			$630,000	
Gross Office Annual Rental Income			$360,000	
Total Gross Annual Rental Income			$990,000	
Less Vacancy & Collection	5%	$	(49,500)	
Gross Effective Income			$940,500	
Non-reimbursable operating expenses	4%		(37,620)	
Net Operating Income			$902,880	
Cap Rate			9%	
Estimated Capitalized Value			**$10,032,000**	
Capitalized Value per SF			**$223**	

Source: Economics Research Associates

Table 9
Second Scenario - Parking Constrained

V-2B VILLAGE DEVELOPMENT COSTS

Project Square Footage

Retail	30,000
Office	15,000
Residential for Sale	89,100

Underground Parking (Residential Spaces only) 121 1 underground parking level

	Total	Per SF	Per Space	Per Unit	% of Total
Direct Costs					
Direct Costs, Retail /1	$2,880,000	$96			10.5%
Direct Costs, Office /1	$2,025,000	$135			7.4%
TI Allowance	$900,000	$20			3.3%
Direct Costs, Residential /1	$10,157,000	$114			36.9%
Direct costs, Underground Parking	$1,092,857			$9,000	4.0%
Subtotal Direct Costs	**$17,054,857**				61.9%
Commercial Parking Fee	**$2,193,750**		$13,000		8.0%
Soft Costs					
Developer Overhead 2/	$682,194				2.5%
Residential Open Space Fee	$810,000			$10,000	2.9%
Commercial and Residential Fees 3/	$1,993,770				7.2%
Financing Costs /4	$1,534,937				5.6%
Architectural & Engineering 5/	$511,646				1.9%
Miscelaneous (Legal and Other)	$250,000				0.9%
Subtotal Indirect Costs	**$5,782,547**				21.0%
Contingency 6/	**$2,503,115**				9.1%
Total Development Cost (excluding land)	**$27,534,270**				100.0%

1/ Includes site improvements, demolition, construction cost, contingency, etc.
2/ Based on 4% of Subtotal Direct Costs
3/ Includes Public Facility, Sewer, Park, Plan Check, Building Permit, School and Water Capacity Fees
4/ Based on 9% of Subtotal Direct costs
5/ Based on 3% of Subtotal Direct Costs
6/ Based on 10% of Subtotal Direct Costs, Commercial Parking Fee and Subtotal Indirect Costs

Source: Economics Research Associates

Table 10
Second Scenario - Parking Constrained

V-2B VILLAGE FINANCING ESTIMATE

Revenues		**Amount**
For-sale Housing Revenue		$24,378,000
Capitalized Value of Retail Rental Property		$10,032,000
Total Sources of Revenue		**$34,410,000**
Costs		
Direct Costs		$17,054,857
Commercial Parking Fee		$2,193,750
Indirect Costs (Soft Costs, Financing & Fees)		$5,783,000
Contingency		$2,503,000
Total Costs Excluding Land		**$27,534,607**
Developer Profit	12%	$3,304,153
Total Costs Excluding Land		**$30,838,760**
NET		**$3,571,240**
Residential Value per SF of Land		**$71.4**

Source: Economics Research Associates

Table 11
UC-12 H STREET TROLLEY ASSUMPTIONS

Lot Size	**50,000**
Maximum Coverage	**50%**
Lot Available for Construction	**25,000**

Floor Area Ratio	**6**
Maximum Construction SF	**300,000**

Square Feet Breakdown	**Percentage**	**SF**
- Residential	**83.3%**	**250,000**
- Retail	**8.3%**	**25,000**
- Office	**8.3%**	**25,000**

Parking Spaces		
- Onsite Residential *	**1**	**227**
- Onsite Commercial	**2**	**100**

*** 1 parking space per residential unit**

Source: Economics Research Associates

Table 12
UC-12 H STREET TROLLEY ESTIMATED REVENUES FROM RESIDENTIAL PROPERTY SALE

Unit Type	Total Residential SF	Average Size per Unit	# of Units	Square Footage Per Unit	Price Per Unit	Price Per Square Foot	Total Sales Revenue
Condominium Units	250,000	1,100	227	1,100	$344,850	$313.50	$78,280,950
Total			**227**				**$78,280,950**

Residential Revenue		
Total Sales		$78,280,950
Cost of Sale	4%	($3,131,238)
Net Residential Revenue		**$75,150,000**
Revenue per SF		**$301**

Source: Economics Research Associates.

Table 13
UC-12 H STREET TROLLEY ESTIMATED COMMERCIAL SPACE REVENUE

Leasable Retail SF			25,000	SF
Leasable Office SF			25,000	SF
Total Leasable SF			50,000	SF
NNN Monthly Retail Rental Rate		$	2.25	per month
NNN Monthly Office Rental Rate		$	2.50	per month
Gross Retail Annual Rental Income			$675,000	
Gross Office Annual Rental Income			$750,000	
Total Gross Annual Rental Income			$1,425,000	
Less Vacancy & Collection	5%	$	(71,250)	
Gross Effective Income			$1,353,750	
Non-reimbursable operating expenses	4%		(54,150)	
Net Operating Income			$1,299,600	
Cap Rate			9%	
Estimated Capitalized Value			**$14,440,000**	
Capitalized Value per SF			**$289**	

Source: Economics Research Associates

Table 14
UC-12 H STREET TROLLEY DEVELOPMENT COSTS

Project Square Footage

Retail	25,000
Office	25,000
Residential for Sale	250,000

Underground Parking (Residential Spaces)	227	2 underground residential parking levels
Underground Parking (Commercial Spaces)	100	1 underground commercial parking level

	Total	Per SF	Per Unit	% of Total
Direct Costs				
Direct Costs, Retail /1	$2,400,000	$96		3.0%
Direct Costs, Office /1	$3,375,000	$135		4.3%
TI Allowance	$1,000,000	$20		1.3%
Direct Costs, Residential /1	$40,000,000	$160		50.6%
Direct costs, Residential Underground Parking	$5,675,000		$25,000	7.2%
Direct costs, Commercial Underground Parking	$2,500,000		$25,000	3.2%
Subtotal Direct Costs	**$54,950,000**			69.6%
Soft Costs				
Developer Overhead 2/	$2,198,000			2.8%
Residential Open Space Fee	$2,270,000		$10,000	2.9%
Commercial and Residential Fees 3/	$5,556,486			7.0%
Financing Costs /4	$4,945,500			6.3%
Architectural & Engineering 5/	$1,648,500			2.1%
Miscelaneous (Legal and Other)	$250,000			0.3%
Subtotal Indirect Costs	**$16,868,486**			21.4%
Contingency 6/	**$7,181,849**			9.1%
Total Development Cost (excluding land)	**$79,000,335**			100.0%

1/ Includes site improvements, demolition, construction cost, contingency, etc.

2/ Based on 4% of Subtotal Direct Costs

3/ Includes Public Facility, Sewer, Park, Plan Check, Building Permit, School and Water Capacity Fees

4/ Based on 9% of Subtotal Direct costs

5/ Based on 3% of Subtotal Direct Costs

6/ Based on 10% of Subtotal Direct Costs, Commercial Parking Fee and Subtotal Indirect Costs

Source: Economics Research Associates

Table 15
UC-12 H STREET TROLLEY FINANCING ESTIMATE

Revenues		**Amount**
For-sale Housing Revenue		$75,150,000
Capitalized Value of Retail Rental Property		$14,440,000
Total Sources of Revenue		**$89,590,000**
Costs		
Direct Costs		$54,950,000
Indirect Costs (Soft Costs, Financing & Fees)		$16,868,486
Contingency		$7,181,849
Total Costs Excluding Land		**$79,000,335**
Developer Profit	12%	$9,480,040
Total Costs Excluding Land		**$88,480,375**
NET		**$1,109,625**
Residential Value per SF of Land		**$22.2**

Source: Economics Research Associates

Appendix D. Facilities Implementation Analysis

Chula Vista urban core

September 2006

D | Appendix

Economic &
Planning Systems
Real Estate Economics
Regional Economics
Public Finance
Land Use Policy

DRAFT REPORT

CHULA VISTA URBAN CORE SPECIFIC PLAN FACILITIES IMPLEMENTATION ANALYSIS

Prepared for:

City of Chula Vista

Prepared by:

Economic & Planning Systems, Inc.

May 18, 2006

EPS #15001

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I. INTRODUCTION AND SUMMARY OF FINDINGS

Economic & Planning Systems (EPS) and McGill Martin Self (MMS) have been retained by the City of Chula Vista to prepare a Facilities Implementation Analysis (FIA) for the Urban Core Specific Plan. The FIA involves the following analyses:

1. Cost estimates, definitions of purpose, and allocation of geographic areas of benefit for the public improvements called for in the Specific Plan;

2. Projections of development in the Urban Core Specific Plan area over the next several decades;

3. Identification of public improvements that may be funded through nexus-based development impact fee programs;

4. Identification of any temporary and overall funding deficits attributable to shortfalls in fee revenues versus the costs of improvements;

5. Evaluation of the impacts of such fees on the feasibility of new development;

6. Discussion of the availability and applicability of alternative funding mechanisms, including redevelopment tax increment;

7. Revenue estimates for the tax increment likely to be generated through redevelopment in the Urban Core.

This analysis is intended to provide the decision-makers of the City of Chula Vista with an understanding of the purposes of various improvements, the extent to which the development in the Urban Core is likely to support the required costs of those improvements, and the various mechanisms through which those funds could be generated. This knowledge will be critical in prioritizing the public infrastructure and facility investments in various locations and at various times.

SUMMARY OF FINDINGS

This analysis has led to the following conclusions:

1. The public improvements called for in the Urban Core Specific Plan are estimated to cost a total of $135 million in today's dollars. These improvements include projects for transportation, traffic signalization, transit, and public spaces (parks and plazas).

2. A limited group of these public improvements are required to provide new capacity for development expected to occur in the Urban Core. The remaining improvements are required to address existing deficiencies and/or aesthetic

improvements in the Urban Core, and may have wider areas of benefit, including the Bayfront, Western Chula Vista, or the entire City.

3. Based on the findings and projections of market research, it is estimated that roughly 3,600 housing units, 259,000 square feet of retail, 1.1 million square feet of office space, and 650,000 square feet of hotel/motel will be developed in the Urban Core Specific Plan area through the year 2030. Full buildout of the Urban Core's expected future development—an additional 3,500 housing units and 200,000 square feet of office—may not occur for several additional decades.

4. The imposition of development impact fees in the Urban Core based only on those improvements required to mitigate the demands from new development would result in Transportation and Traffic Signal fees that are below the current levels being levied in Chula Vista. The Parks Acquisition and Development (PAD) fee calculated for the Urban Core would be slightly higher than the PAD fees currently applicable in Western Chula Vista, but well below the current levels in the Eastern Territories.

5. The impact fee revenues would not cover the full costs of improvements as detailed in the Specific Plan, and are also expected to lag behind the desired pace of improvements, which are heavily concentrated in the "5-10 year" timeframe. In sum, the impact fees calculated herein would be expected to cover roughly half of the total costs of improvements included in the Specific Plan.

6. The impact fees, as calculated for the Urban Core, would not materially affect the feasibility of desired residential or commercial development.

7. The development and continued value escalation of Redevelopment Project Area parcels within Western Chula Vista is projected to yield a total of nearly $200 million (present value) in tax increment through the year 2036. This does not include or assume any increase in revenue related to development proposals currently being discussed for the Bayfront area.

8. If impact fees are levied in the Urban Core as calculated in this document, only about $67 million or 35 percent of the tax increment would be required to fund other improvements not covered by the impact fees, leaving roughly $127 million (present value) for other projects within western Chula Vista redevelopment areas.

9. Alternative funding sources such as regional or intergovernmental grants, Capital Improvements Program funds, developer exactions, and land-secured financing (Mello-Roos districts) may also be appropriate and attainable for certain improvements, thereby lowering the financial burden on the desired Urban Core development and allowing more tax increment funds to be used for other priorities in the City.

II. PUBLIC IMPROVEMENT COSTS

The Urban Core Specific Plan identifies a variety of public facilities for which this implementation analysis has been prepared. Some of these facilities are required to provide capacity for new residents, workers, and visitors to the Urban Core. Examples include intersection and roadway improvements, park improvements, etc. Other public facilities in the Specific Plan serve users beyond the Urban Core, such as the interchange and transit improvements that will be used by Bayfront and Eastern Chula Vista populations as well as those in Urban Core.

City staff, MMS, and EPS have established the list and estimated the costs of public improvements associated with the Urban Core Specific Plan, as shown on **Table 1**. The costs for these improvements have been estimated with contingencies included, and have been verified as reasonably conservative by City engineering staff. As shown, it is estimated that the total costs of public improvements for the Urban Core Specific Plan will total roughly $135 million, in today's dollars.

The list of improvements has been segregated into four categories: transportation improvements, traffic signals, transit improvements, and public spaces. This categorization is helpful in estimating the levels of impact fees that would be required to provide such improvements, and comparing those fees to the existing fees imposed in the City of Chula Vista.

As **Table 1** shows, the majority of the public improvement costs are categorized as transportation improvements. These include freeway interchange improvements, street widenings, added turn lanes, roadway restriping, etc. Sidewalk and crosswalk improvements are also shown in this category, as these improvements would be most efficiently constructed during the improvement of the streets.

Public spaces comprise the second largest category of costs. **Table 1** shows that three major park improvements would be required under the Specific Plan—Lower Sweetwater Park, Memorial Park, and Promenade Park. The costs of acquiring land and developing park features are included in these cost estimates. In addition, numerous plazas are envisioned throughout the Urban Core. These plazas would provide a different type of public space than would a traditional park, but are similar in providing public access to places for congregation and recreation.

EPS has assumed that the public space acquisitions and improvements generally would be phased according to the demands created by residential development in the Urban Core, but in fact may occur more opportunistically as parcels are available. Also, it is important to note that the park improvements (excluding the plazas) sum to roughly 33 to 40 acres. This amount may not be adequate for all of the residential development ultimately envisioned by the Specific Plan, but the total demand is assumed to be met in combination with proposed plazas in the Urban Core and parks in the Bayfront area.

Table 1
Public Facilities and Infrastructure Improvements
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Comments	Total Cost	Time Frame	Description/ Comments
TRANSPORTATION IMPROVEMENTS				
Bay Blvd/I-5 SB Ramp/E Street	Restripe At Ramp	$10,000	0-5 years	Add EB, SB and NB right-turn lanes
F Street Improvements (I-5 to Fourth Ave.)	48 feet wide, Includes Class I or II Bike Lane	$6,056,000	0-5 years	
F Street Sidewalk Improvements (I-5 to Fourth Ave.)	sidewalk lighting	$3,813,000	0-5 years	Standard paving of 16' wide incl. landscaping, tree wells and furniture/lighting?
Fifth Ave/H Street Change Approach	Add protective plus permissive phasing, add a 12' wide westbound right turn lane 120' in length included in CIP	$74,000	0-5 years	Change NB/SB approaches
Fourth Ave/H Street Add Lane		$74,000	0-5 years	Add EB/WB right-turn lane
Fourth Ave/SR-54 EB Ramp Add Lane		$74,000	0-5 years	Add EB right-turn lane
I-5 NB Ramp/E Street Add Lane & LRT	Coordinate with CalTrans, Only Restripe	$10,000	0-5 years	Add lane and LRT grade separation
I-5 NB Ramp/H Street Add Lanes/LRT/Restripe	Coordinate with CalTrans, Only Restripe	$10,000	0-5 years	Add lanes, LRT grade separation & restripe
I-5 SB Ramp/H Street Add Lanes	Coordinate with CalTrans, Only Restripe	$10,000	0-5 years	Add SB left, EB thru and right turn lanes
Third Ave/E Street Convert Lanes	Right Turn lanes, striping	$10,000	0-5 years	Convert to exclusive right-turn lanes
Third Ave/F Street Convert Lanes	Right Turn lanes, striping	$10,000	0-5 years	Convert to exclusive right-turn lanes
Third Ave/G Street Convert Lanes	Right Turn lanes, striping	$10,000	0-5 years	Convert to exclusive right-turn lanes
Third Avenue Crosswalk Paving (Village District)	Includes 8 crosswalks at intersections	$550,000	0-5 years	Crosswalk special paving along Third Ave
Third Avenue Sidewalk Improvements	Assume Special Paving between 14 to 38' wide (depends on diagonal parking)' Sidewalk monolithic curb and gutter, driveways and sidewalk lighting.	$1,744,000	0-5 years	16' wide improvements incl. landscaping, furniture, tree wells, and lighting
Third Avenue Midblock Improvements (5 @ 50' LF each)	Midblock Crossings and enhanced sidewalk	$954,000	0-5 years	38' wide improvements at mid-block crossings incl. landscaping, furniture, tree wells, and lighting
Third Avenue Street Improvements (E to G St.)	Narrow most of Third repave entire road	$5,014,000	0-5 years	
Broadway Sidewalk Improvements (C to L St.)	Assume Special Paving 9' wide Sidewalk monolithic curb and gutter, driveways, sidewalk lighting	$7,469,000	5-10 years	
Broadway Special Paving-Crosswalks	Assume Stamped Paving 8' wide	$93,000	5-10 years	Crosswalk special paving at E, F, G, H Streets
Broadway Street Improvements (E to F St.)	Widen Road 14 ' New pavement (82' curb to curb with 12' raised median), street lights, lane markings, curb, gutter and drainage	$3,066,000	5-10 years	Median & landscaping, lighting, curb-gutter, bike lanes
Broadway Street Improvements (C to E St., F to L St.)	New pavement (82' curb to curb with 12' raised median), street lights, lane markings, curb, gutter and drainage	$15,635,000	5-10 years	Total cost adjusted by $6M to incl. current TransNet program improvements.
Broadway/SR-54 WB Ramp Restripe	Restripe At Ramp	$10,000	5-10 years	Restripe into shared left-right lane
E Street Improvements (I-5 to 300' east of ramp)	Widen E Street Six Feet 300 feet in length, railroad arms relocate, restripe bridge	$139,000	5-10 years	
H Street Improvements (I-5 to Broadway)	86' wide, 14' raised median, street lights	$4,951,000	5-10 years	

Table 1
Public Facilities and Infrastructure Improvements
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Comments	Total Cost	Time Frame	Description/ Comments
J Street/I-5 NB Ramp Add Lane	Construction feasibility under review	$10,000	5-10 years	Add EB left-turn and WB right-turn lane
L Street/Bay Blvd Signal/Add lane	Construction feasibility under review	$474,000	5-10 years	Add signal, SB left-turn, and NB right-turn
E Street Streetscape Improvements (I-5 to Broadway, 3rd Ave. to 4th Ave.)	Enhanced landscaping, driveways, sidewalk lighting	$2,211,500	10 + Years	Standard paving 8'-13' incl. landscaping, furniture, tree wells and lighting. Figure shown = 50% of estimate provided due to reduced scope of area to be improved.
H Street Improvements (Broadway to Third)	70' wide, 14' raised median, street lights	$9,231,000	10 + Years	
H Street Sidewalk Improvements	Assume Special Paving 16' wide Sidewalk monolithic curb and gutter, driveways, sidewalk lighting, need 38' ROW between I-5/Broadway, 8' ROW between Broadway/Third Ave)	$1,988,000	10 + Years	Does not incl. additional ROW costs.
H Street Special Paving-Crosswalks (I-5 to Third Ave.)	Assume Stamped Paving 8' wide	$389,000	10 + Years	Crosswalk special paving at Third, Fourth, Fifth, Broadway, Woodlawn & I-5
Woodlawn Ave Sidewalk Improvements (E to H St.)	20' wide standard	$1,710,000	10 + Years	
Woodlawn Ave Street Improvements (E to G St.)	Include raised median connect to H street	$4,668,750	10 + Years	Doesn't include land acquisition costs
	Subtotal, Transportation	**$70,468,250**		
TRAFFIC SIGNAL				
Bay Blvd/I-5 SB Ramp Signal	Coordinate with Caltrans & CCV	$250,000	5-10 years	Add signal
Broadway/H Street Jumper Lane	Signs, Traffic Signal Modification	$38,000	5-10 years	Add jumper lane or thru lane
Industrial Blvd/I-5 NB Ramp Signal	Per CCV, CalTrans coordination.	$250,000	5-10 years	Add signal
Second Ave/D Street All-way Stop	4 Way Stop/ 2 Stop Signs	$10,000	10 + Years	Convert to all-way stop
Fourth Ave/Brisbane Street Signal Phase	Per CCV add signal head, restripe, reprogram	$74,000	10 + Years	Add SB right-turn overlap phase to signal
	Subtotal, Traffic Signal	**$622,000**		
TRANSIT IMPROVEMENTS				
Bus Shelters	Cost per CCV (3 @ 3rd Ave, 4 @ E St., 2 @ Broadway and 6 @ H St.)	$169,000	5-10 years	At each shuttle stop by shuttle loop service and citywide bus and transit service
	Subtotal, Transit Improvements	**$169,000**		

Table 1
Public Facilities and Infrastructure Improvements
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Comments	Total Cost	Time Frame	Description/ Comments
PUBLIC SPACES				
Parks				
Lower Sweetwater Park & Improvements	(UCSP Est.) 15-20 ac	$30,000,000	5-10 years	
Memorial Park Annex & Park Improvements	(UCSP Est.) 3-5 ac	$7,500,000	10 + Years	
Promenade Park & Improvements (West of Broadway between E & H St.)	(UCSP Est.) 15 ac	$22,000,000	10 + Years	
	Subtotal, Parks	**$59,500,000**		
Plazas				
3rd Ave/H Street Plaza Improvements		$350,000	0-5 years	
I-5 & F Street Overcrossing Plaza		$350,000	0-5 years	
Third Ave & F Street Plaza	Existing	$350,000	0-5 years	
Third Ave @ Memorial Park Plaza	Existing	$350,000	0-5 years	
4th Ave/H Street Plaza Improvements		$350,000	5-10 years	
5th Ave/H Street Plaza Improvements		$500,000	5-10 years	
Broadway/E Street Plaza & Improvements		$350,000	5-10 years	
Broadway/H Street Plaza & Improvements		$350,000	5-10 years	
E St. @ Trolley Station		$350,000	5-10 years	
H Street @ Chula Vista Center (Mall)		$350,000	10 + Years	
H Street @ Woodlawn Plaza		$350,000	10 + Years	
I-5 & E Street Overcrossing Plaza		$350,000	10 + Years	
I-5 & H Street Overcrossing Plaza		$350,000	10 + Years	
	Subtotal, Plazas	**$4,700,000**		
	Subtotal, All Public Spaces (Parks and Plazas)	**$64,200,000**		
TOTAL, ALL PUBLIC FACILITIES AND INFRASTRUCTURE IMPROVEMENTS		**$135,459,250**		

Unit costs are expressed in 2005 dollars through the entire spreadsheet and will be subject to change. Numbers are rounded to the thousandths dollar.

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

The costs for transit improvements and traffic signals are fairly minimal in the Urban Core Specific Plan, with each category representing less than $1 million.

Tables 2 and 3 further define the costs of various improvements according to the purpose of each improvement and the geographical areas of benefit. These distinctions are critical in understanding the nexus between new development in the Urban Core and the need for additional improvements, as well as identifying costs that should be borne by a larger geographic area than just the Urban Core. For example, new development in the Urban Core may not be responsible for fully funding improvements that will substantially benefit new development in the Bayfront area or existing development in the Eastern Territories. EPS has worked with City staff to conceptually allocate the costs for various improvements by purpose and geography. **Table 2** shows these allocations by percentage of costs, while **Table 3** calculates the actual dollars amounts implied by those allocations.

It is important to note that the improvements shown as being the responsibility of the Urban Core to provide new capacity are only those improvements identified as required for mitigation in environmental impact assessments. All other costs are "optional" in the sense that they are not required for environmental mitigation, and thus would not be wholly attributable to new development in the Urban Core. This distinction represents a highly conservative assumption regarding the nexus requirements for impact fees, as it is possible that other improvements intended to serve new Urban Core development may also be eligible for impact fee funding. This present study is not intended to fully document the nexus relationships between development and needed improvements; such analysis would be required separately prior to the adoption of any impact fees unique to the Urban Core.

Table 4 provides an estimate of the improvement costs by category, purpose, and geography in three different time periods—within five years, five to ten years, and ten or more years. This assessment distinguishes those improvements that are most critical to support new development in the near term from those that are likely to be required only as the Urban Core undergoes substantial new development. As **Table 4** shows, most of the costs attributable to the need for added capacity for development in the Urban Core are associated with public spaces. The transportation improvements are largely allocated to Citywide responsibility, as many of the improvements are required or desired to enhance traffic flow and the urban experience on major corridors that serve the entire City rather than just Urban Core populations. Again, the Urban Core is assigned only those transportation improvements identified as being required to mitigate additional traffic associated with new development in the Urban Core—the remaining costs are assumed to be more broadly shared.

It is important to note that several improvements envisioned for the Urban Core area are not included in this analysis, for various reasons. Parking structures for the transit stations and for the Village have not been included as costs in this Urban Core facilities analysis, because they serve a City-wide or even regional population and may be funded through other means. Similarly, the costs of building pedestrian paseos have not been

Table 2
Allocation of Public Facilities and Infrastructure Improvements -- Percentages
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Total Cost	Time Frame	% Needed For:		Geographical Responsibility (%)			
			New Capacity	Amenity	Urban Core	Bay-Front	Western C.V.	City-wide
TRANSPORTATION IMPROVEMENTS								
Bay Blvd/I-5 SB Ramp/E Street	$10,000	0-5 years	100%		67%	33%		
F Street Improvements (I-5 to Fourth Ave.)	$6,056,000	0-5 years		100%			100%	
F Street Sidewalk Improvements (I-5 to Fourth Ave.)	$3,813,000	0-5 years		100%			100%	
Fifth Ave/H Street Change Approach	$74,000	0-5 years	100%		100%			
Fourth Ave/H Street Add Lane	$74,000	0-5 years	100%		100%			
Fourth Ave/SR-54 EB Ramp Add Lane	$74,000	0-5 years	100%		100%			
I-5 NB Ramp/E Street Add Lane & LRT	$10,000	0-5 years	100%		67%	33%		
I-5 NB Ramp/H Street Add Lanes/LRT/Restripe	$10,000	0-5 years	100%		67%	33%		
I-5 SB Ramp/H Street Add Lanes	$10,000	0-5 years	100%		67%	33%		
Third Ave/E Street Convert Lanes	$10,000	0-5 years		100%				100%
Third Ave/F Street Convert Lanes	$10,000	0-5 years		100%				100%
Third Ave/G Street Convert Lanes	$10,000	0-5 years		100%				100%
Third Avenue Crosswalk Paving (Village District)	$550,000	0-5 years		100%				100%
Third Avenue Sidewalk Improvements	$1,744,000	0-5 years		100%				100%
Third Avenue Midblock Improvements (5 @ 50' LF each)	$954,000	0-5 years		100%				100%
Third Avenue Street Improvements (E to G St.)	$5,014,000	0-5 years		100%				100%
Broadway Sidewalk Improvements* (C to L St.)	$7,469,000	5-10 years		100%				100%
Broadway Special Paving-Crosswalks	$93,000	5-10 years		100%				100%
Broadway Street Improvements (E to F St.)	$3,066,000	5-10 years		100%				100%
Broadway Street Improvements (C to E St., F to L St.)	$15,635,000	5-10 years		100%				100%
Broadway/SR-54 WB Ramp Restripe	$10,000	5-10 years	100%		100%			
E Street Improvements (I-5 to 300' east of ramp)	$139,000	5-10 years	100%		67%	33%		
H Street Improvements (I-5 to Broadway)	$4,951,000	5-10 years	100%		67%	33%		
J Street/I-5 NB Ramp Add Lane	$10,000	5-10 years	100%		67%	33%		
L Street/Bay Blvd Signal/Add lane	$474,000	5-10 years	100%		67%	33%		
E Street Streetscape Improvements (I-5 to Broadway, 3rd Ave. to 4th Ave.)	$2,211,500	10 + Years		100%	50%		50%	
H Street Improvements (Broadway to Third)	$9,231,000	10 + Years		100%				100%
H Street Sidewalk Improvements	$1,988,000	10 + Years		100%				100%
H Street Special Paving-Crosswalks (I-5 to Third Ave.)	$389,000	10 + Years		100%				100%
Woodlawn Ave Sidewalk Improvements (E to H St.)	$1,710,000	10 + Years		100%	100%			
Woodlawn Ave Street Improvements (E to G St.)	$4,668,750	10 + Years		100%	100%			
Subtotal, Transportation	**$70,468,250**							
TRAFFIC SIGNAL								
Bay Blvd/I-5 SB Ramp Signal	$250,000	5-10 years	100%		67%	33%		
Broadway/H Street Jumper Lane	$38,000	5-10 years	100%		100%			
Industrial Blvd/I-5 NB Ramp Signal	$250,000	5-10 years	100%		67%	33%		
Second Ave/D Street All-way Stop	$10,000	10 + Years	100%		100%			
Fourth Ave/Brisbane Street Signal Phase	$74,000	10 + Years	100%		100%			
Subtotal, Traffic Signal	**$622,000**							

Table 2
Allocation of Public Facilities and Infrastructure Improvements -- Percentages
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Total Cost	Time Frame	% Needed For:		Geographical Responsibility (%)			
			New Capacity	Amenity	Urban Core	Bay-Front	Western C.V.	City-wide
TRANSIT IMPROVEMENTS								
Bus Shelters	$169,000	5-10 years		100%				100%
Subtotal, Transit Improvements	**$169,000**							
PUBLIC SPACES								
Parks								
Lower Sweetwater Park & Improvements	$30,000,000	5-10 years	100%		100%			
Memorial Park Annex & Park Improvements	$7,500,000	10 + Years	100%		100%			
Promenade Park & Improvements (West of Broadway between E & H St.)	$22,000,000	10 + Years	100%		100%			
Subtotal, Parks	**$59,500,000**							
Plazas								
3rd Ave/H Street Plaza Improvements	$350,000	0-5 years	100%		100%			
I-5 & F Street Overcrossing Plaza	$350,000	0-5 years	100%		100%			
Third Ave & F Street Plaza	$350,000	0-5 years	100%		100%			
Third Ave @ Memorial Park Plaza	$350,000	0-5 years	100%		100%			
4th Ave/H Street Plaza Improvements	$350,000	5-10 years	100%		100%			
5th Ave/H Street Plaza Improvements	$500,000	5-10 years	100%		100%			
Broadway/E Street Plaza & Improvements	$350,000	5-10 years	100%		100%			
Broadway/H Street Plaza & Improvements	$350,000	5-10 years	100%		100%			
E St. @ Trolley Station	$350,000	5-10 years	100%		100%			
H Street @ Chula Vista Center (Mall)	$350,000	10 + Years	100%		100%			
H Street @ Woodlawn Plaza	$350,000	10 + Years	100%		100%			
I-5 & E Street Overcrossing Plaza	$350,000	10 + Years	100%		100%			
I-5 & H Street Overcrossing Plaza	$350,000	10 + Years	100%		100%			
Subtotal, Plazas	**$4,700,000**							
Subtotal, All Public Spaces (Parks and Plazas)	**$64,200,000**							
TOTAL, ALL PUBLIC FACILITIES AND INFRASTRUCTURE IMPROVEMENTS	**$135,459,250**							

Unit costs are expressed in 2005 dollars through the entire spreadsheet and will be subject to change. Numbers are rounded to the thousandths dollar.

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 3
Allocation of Public Facilities and Infrastructure Improvements -- Dollar Amounts
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Total Cost	Time Frame	$ Needed For: New Capacity	$ Needed For: Amenity	Geographical Responsibility ($): Urban Core	Bay-Front	Western C.V.	City-wide
TRANSPORTATION IMPROVEMENTS								
Bay Blvd/I-5 SB Ramp/E Street	$10,000	0-5 years	$10,000	$0	$6,700	$3,300	$0	$0
F Street Improvements (I-5 to Fourth Ave.)	$6,056,000	0-5 years	$0	$6,056,000	$0	$0	$6,056,000	$0
F Street Sidewalk Improvements (I-5 to Fourth Ave.)	$3,813,000	0-5 years	$0	$3,813,000	$0	$0	$3,813,000	$0
Fifth Ave/H Street Change Approach	$74,000	0-5 years	$74,000	$0	$74,000	$0	$0	$0
Fourth Ave/H Street Add Lane	$74,000	0-5 years	$74,000	$0	$74,000	$0	$0	$0
Fourth Ave/SR-54 EB Ramp Add Lane	$74,000	0-5 years	$74,000	$0	$74,000	$0	$0	$0
I-5 NB Ramp/E Street Add Lane & LRT	$10,000	0-5 years	$10,000	$0	$6,700	$3,300	$0	$0
I-5 NB Ramp/H Street Add Lanes/LRT/Restripe	$10,000	0-5 years	$10,000	$0	$6,700	$3,300	$0	$0
I-5 SB Ramp/H Street Add Lanes	$10,000	0-5 years	$10,000	$0	$6,700	$3,300	$0	$0
Third Ave/E Street Convert Lanes	$10,000	0-5 years	$0	$10,000	$0	$0	$0	$10,000
Third Ave/F Street Convert Lanes	$10,000	0-5 years	$0	$10,000	$0	$0	$0	$10,000
Third Ave/G Street Convert Lanes	$10,000	0-5 years	$0	$10,000	$0	$0	$0	$10,000
Third Avenue Crosswalk Paving (Village District)	$550,000	0-5 years	$0	$550,000	$0	$0	$0	$550,000
Third Avenue Sidewalk Improvements	$1,744,000	0-5 years	$0	$1,744,000	$0	$0	$0	$1,744,000
Third Avenue Midblock Improvements (5 @ 50' LF each)	$954,000	0-5 years	$0	$954,000	$0	$0	$0	$954,000
Third Avenue Street Improvements (E to G St.)	$5,014,000	0-5 years	$0	$5,014,000	$0	$0	$0	$5,014,000
Broadway Sidewalk Improvements* (C to L St.)	$7,469,000	5-10 years	$0	$7,469,000	$0	$0	$0	$7,469,000
Broadway Special Paving-Crosswalks	$93,000	5-10 years	$0	$93,000	$0	$0	$0	$93,000
Broadway Street Improvements (E to F St.)	$3,066,000	5-10 years	$0	$3,066,000	$0	$0	$0	$3,066,000
Broadway Street Improvements (C to E St., F to L St.)	$15,635,000	5-10 years	$0	$15,635,000	$0	$0	$0	$15,635,000
Broadway/SR-54 WB Ramp Restripe	$10,000	5-10 years	$10,000	$0	$10,000	$0	$0	$0
E Street Improvements (I-5 to 300' east of ramp)	$139,000	5-10 years	$139,000	$0	$93,130	$45,870	$0	$0
H Street Improvements (I-5 to Broadway)	$4,951,000	5-10 years	$4,951,000	$0	$3,317,170	$1,633,830	$0	$0
J Street/I-5 NB Ramp Add Lane	$10,000	5-10 years	$10,000	$0	$6,700	$3,300	$0	$0
L Street/Bay Blvd Signal/Add lane	$474,000	5-10 years	$474,000	$0	$317,580	$156,420	$0	$0
E Street Streetscape Improvements (I-5 to Broadway, 3rd Ave. to 4th Ave.)	$2,211,500	10 + Years	$0	$2,211,500	$1,105,750	$0	$1,105,750	$0
H Street Improvements (Broadway to Third)	$9,231,000	10 + Years	$0	$9,231,000	$0	$0	$0	$9,231,000
H Street Sidewalk Improvements	$1,988,000	10 + Years	$0	$1,988,000	$0	$0	$0	$1,988,000
H Street Special Paving-Crosswalks (I-5 to Third Ave.)	$389,000	10 + Years	$0	$389,000	$0	$0	$0	$389,000
Woodlawn Ave Sidewalk Improvements (E to H St.)	$1,710,000	10 + Years	$0	$1,710,000	$1,710,000	$0	$0	$0
Woodlawn Ave Street Improvements (E to G St.)	$4,668,750	10 + Years	$0	$4,668,750	$4,668,750	$0	$0	$0
Subtotal, Transportation	**$70,468,250**		***$5,846,000***	***$64,622,250***	***$11,477,880***	***$1,852,620***	***$10,974,750***	***$46,163,000***
TRAFFIC SIGNAL								
Bay Blvd/I-5 SB Ramp Signal	$250,000	5-10 years	$250,000	$0	$167,500	$82,500	$0	$0
Broadway/H Street Jumper Lane	$38,000	5-10 years	$38,000	$0	$38,000	$0	$0	$0
Industrial Blvd/I-5 NB Ramp Signal	$250,000	5-10 years	$250,000	$0	$167,500	$82,500	$0	$0
Second Ave/D Street All-way Stop	$10,000	10 + Years	$10,000	$0	$10,000	$0	$0	$0
Fourth Ave/Brisbane Street Signal Phase	$74,000	10 + Years	$74,000	$0	$74,000	$0	$0	$0
Subtotal, Traffic Signal	**$622,000**		***$622,000***	***$0***	***$457,000***	***$165,000***	***$0***	***$0***

Table 3
Allocation of Public Facilities and Infrastructure Improvements -- Dollar Amounts
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvements	Total Cost	Time Frame	$ Needed For: New Capacity	$ Needed For: Amenity	Geographical Responsibility ($): Urban Core	Bay-Front	Western C.V.	City-wide
TRANSIT IMPROVEMENTS								
Bus Shelters	$169,000	5-10 years	$0	$169,000	$0	$0	$0	$169,000
Subtotal, Transit Improvements	***$169,000***		***$0***	***$169,000***	***$0***	***$0***	***$0***	***$169,000***
PUBLIC SPACES								
Parks								
Lower Sweetwater Park & Improvements	$30,000,000	5-10 years	$30,000,000	$0	$30,000,000	$0	$0	$0
Memorial Park Annex & Park Improvements	$7,500,000	10 + Years	$7,500,000	$0	$7,500,000	$0	$0	$0
Promenade Park & Improvements (West of Broadway between E & H St.)	$22,000,000	10 + Years	$22,000,000	$0	$22,000,000	$0	$0	$0
Subtotal, Parks	***$59,500,000***		***$59,500,000***	***$0***	***$59,500,000***	***$0***	***$0***	***$0***
Plazas								
3rd Ave/H Street Plaza Improvements	$350,000	0-5 years	$350,000	$0	$350,000	$0	$0	$0
I-5 & F Street Overcrossing Plaza	$350,000	0-5 years	$350,000	$0	$350,000	$0	$0	$0
Third Ave & F Street Plaza	$350,000	0-5 years	$350,000	$0	$350,000	$0	$0	$0
Third Ave @ Memorial Park Plaza	$350,000	0-5 years	$350,000	$0	$350,000	$0	$0	$0
4th Ave/H Street Plaza Improvements	$350,000	5-10 years	$350,000	$0	$350,000	$0	$0	$0
5th Ave/H Street Plaza Improvements	$500,000	5-10 years	$500,000	$0	$500,000	$0	$0	$0
Broadway/E Street Plaza & Improvements	$350,000	5-10 years	$350,000	$0	$350,000	$0	$0	$0
Broadway/H Street Plaza & Improvements	$350,000	5-10 years	$350,000	$0	$350,000	$0	$0	$0
E St. @ Trolley Station	$350,000	5-10 years	$350,000	$0	$350,000	$0	$0	$0
H Street @ Chula Vista Center (Mall)	$350,000	10 + Years	$350,000	$0	$350,000	$0	$0	$0
H Street @ Woodlawn Plaza	$350,000	10 + Years	$350,000	$0	$350,000	$0	$0	$0
I-5 & E Street Overcrossing Plaza	$350,000	10 + Years	$350,000	$0	$350,000	$0	$0	$0
I-5 & H Street Overcrossing Plaza	$350,000	10 + Years	$350,000	$0	$350,000	$0	$0	$0
Subtotal, Plazas	***$4,700,000***		***$4,700,000***	***$0***	***$4,700,000***	***$0***	***$0***	***$0***
Subtotal, All Public Spaces (Parks and Plazas)	***$64,200,000***		***$64,200,000***	***$0***	***$64,200,000***	***$0***	***$0***	***$0***
TOTAL, ALL PUBLIC FACILITIES AND INFRASTRUCTURE IMPROVEMENTS	**$135,459,250**		**$70,668,000**	**$64,791,250**	**$76,134,880**	**$2,017,620**	**$10,974,750**	**$46,332,000**

Unit costs are expressed in 2005 dollars through the entire spreadsheet and will be subject to change. Numbers are rounded to the thousandths dollar.

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 4
Allocation of Improvement Costs by Purpose and Geography through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Improvement Category	Geography	0-5 years	5-10 years	10+ years	Total
Transportation Costs					
New Capacity					
	Urban Core	$248,800	$3,744,580	$0	$3,993,380
	Bayfront	$13,200	$1,839,420	$0	$1,852,620
	Total	$262,000	$5,584,000	$0	$5,846,000
Amenity					
	Urban Core	$0	$0	$7,484,500	$7,484,500
	Bayfront	$0	$0	$0	$0
	Western Chula Vista	$9,869,000	$0	$1,105,750	$10,974,750
	Citywide	$8,292,000	$26,263,000	$11,608,000	$46,163,000
	Total	$18,161,000	$26,263,000	$20,198,250	$64,622,250
Traffic Signals					
New Capacity					
	Urban Core	$0	$373,000	$84,000	$457,000
	Bayfront	$0	$165,000	$0	$165,000
	Total	$0	$538,000	$84,000	$622,000
Transit Improvements					
Amenity					
	Urban Core	$0	$0	$0	$0
	Bayfront	$0	$0	$0	$0
	Western Chula Vista	$0	$0	$0	$0
	Citywide	$0	$169,000	$0	$169,000
	Total	$0	$169,000	$0	$169,000
Public Spaces					
New Capacity					
	Urban Core	$1,400,000	$31,900,000	$30,900,000	$64,200,000
Total Improvements					
New Capacity					
	Urban Core	$1,648,800	$36,017,580	$30,984,000	$68,650,380
	Bayfront	$13,200	$2,004,420	$0	$2,017,620
	Total	$1,662,000	$38,022,000	$30,984,000	$70,668,000
Amenity					
	Urban Core	$0	$0	$7,484,500	$7,484,500
	Bayfront	$0	$0	$0	$0
	Western Chula Vista	$9,869,000	$0	$1,105,750	$10,974,750
	Citywide	$8,292,000	$26,432,000	$11,608,000	$46,332,000
	Total	$18,161,000	$26,432,000	$20,198,250	$64,791,250

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

included, as it is assumed that private development would be encouraged to construct these as part of their site plans. The costs of wastewater treatment facilities required to serve new development are assumed to be fully funded through existing user fee programs. And finally, the costs for grade crossings at E and H Streets are to be funded through SANDAG as regional transportation improvements that will appropriately rely on a combination of local, state and federal transportation dollars.

III. DEVELOPMENT PROJECTIONS

The Urban Core Specific Plan proposes new zones to implement new development and redevelopment within designated areas consistent with the City's General Plan over the next 20 to 25 years. Because of the current developed condition of the Urban Core, and the unique nature of urban revitalization, the exact extent, timing and sequence of infill development and redevelopment pursuant to the new zones is unpredictable and depends on a variety of factors. These include, but are not limited to, long-term viability associated with recent development; longevity of other existing residential and commercial uses that may not redevelop over the 25 year planning horizon; preservation of significant historic structures; and development costs associated with the acquisition, demolition, and cleanup of urbanized land. To that end, the Specific Plan anticipates the following projected buildout over the life of the plan consistent with the General Plan:

Type of Development	Net New Development Potential in Urban Core at Full Buildout
Multifamily Residential	7,100 units
Retail	1,650,000 square feet
Commercial	1,300,000 square feet
Hotel/Motel	650,000 square feet

Previous analyses generated by Economics Research Associates (ERA) projected the amount of various types of development that are likely to occur during the next several decades. The ERA work, presented in a documented entitled *City of Chula Vista Urban Core Specific Plan Market Analysis* (June 2, 2005), indicated the following assumptions could represent an aggressive growth scenario for the Urban Core through 2030:

Development Type	Total Demand through 2030	Average Annual Absorption
Residential	3,639 Units	146 Units
Office	1,122,000 Square Feet	44,880 Square Feet

Note that the ERA study indicated that there would be no net new retail development in the Urban Core, as the report determined that the Urban Core already had as much retail as could be envisioned for the future. Also, the ERA report did not attempt to estimate demand and absorption for hotel/motel space.

To estimate the total new development in the Urban Core over the next several decades, EPS has used the ERA absorption projections for residential and office space, shown above, and created new projections for retail and hotel/motel uses. The retail projections are based on the amount of retail square footage envisioned in development projects currently proposed or in various stages of the development pipeline. These retail square footage figures were provided by City staff. EPS's hotel/motel projections assume that lodging development will be fully built out by 2030, because of high demand in the Urban Core as the developments and amenities envisioned for the Bayfront are completed.

In sum, EPS has assembled the development projections for the Urban Core Specific Plan Area shown on **Table 5**. These figures are applied to the various analyses that follow in the next Chapter of this Report.

Table 5
Development Absorption Projections by Time Period
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Land Use Category	Absorption Projections by Time Period				
	0-5 years	5-10 years	10-25 years	>25 Years	Total
Residential Units	730	730	2,179	3,461	7,100
Retail Square Feet (1)	234,000	25,000	0	0	259,000
Office Square Feet	224,400	224,400	673,200	178,000	1,300,000
Hotel/Motel Square Feet	130,000	130,000	390,000	0	650,000

(1) Total retail absorption is well below capacity created in the Specific Plan, corresponding to ERA's market analysis findings. Only retail square footage included in currently proposed projects is assumed to be built in Urban Core.

Sources: City of Chula Vista; Economics Research Associates; Economic & Planning Systems, Inc.

IV. DEVELOPMENT IMPACT FEE ANALYSIS

Enabled by AB 1600, development impact fees are required to establish the "nexus" or quantitative relationship between new development's demands on infrastructure, and the costs to provide capacity to meet those demands. Jurisdictions may not charge development impact fees that exceed the nexus-based costs attributable to new development. While this Facilities Implementation Analysis is not intended to establish the nexus for development impact fees at the level of engineering detail required for a legally defensible ordinance, it provides an estimate of the levels of fees that could be charged to new development in accordance with nexus principles, and evaluates the effects that such added costs may have on the feasibility of the types of development desired in the Urban Core.

This analysis calculates what fees might be charged by impact type, based on the development projected for the Urban Core Specific Plan alone, as a test of the feasibility of the plan. For reference, the discussion refers to transportation development impact fees ("TransDIF"), the Park Acquisition and Development Fee ("PAD"), and other terms generally used in Chula Vista based on existing fee programs. However, this analysis is restricted to the public improvement projects of the Urban Core Specific Plan and the developments projected to take place within that plan area. It is not expected that the City would establish a separate fee structure within this limited geography. Thus, at such time as a TransDIF is established for this area, or future adjustments are made to the PAD fees, those fees may vary significantly from the estimates contained in this report.

CALCULATION OF APPLICABLE IMPACT FEES

As discussed in Chapter II, the public facilities included in the Urban Core Specific Plan can be aggregated into only a few categories:

- Transportation Improvements—street widening, turning lanes, sidewalks and crosswalks, etc.
- Traffic Signals—lights, stop signs, phasing, etc.
- Transit Improvements—bus shelters
- Public Spaces—acquisition and development of parks and plazas

Of these categories, it is clear that the costs for certain transportation improvements, traffic signals, and public spaces would be eligible for funding through development impact fees, as they are demonstrably related to new development and impact fees currently exist for these purposes. Transit improvements are not as definitively related to new development in the Urban Core, as they may represent expanded services that serve the whole City or region, rather than just the residents, workers, and visitors of the Urban Core.

TRANSPORTATION IMPROVEMENTS

Certain transportation improvements are required to provide additional capacity on the existing roadway network, so that the vehicular traffic added from residents, workers, and visitors of the Urban Core will not cause congestion that causes health or safety problems. The City currently imposes a Transportation Development Impact Fee (TransDIF) on development in the Eastern Territories, and has proposed a similar fee to be applied throughout the City. The TransDIF in the Eastern Territories was structured for "greenfield" development, and in some cases is applied on a per-acre basis that does not reflect the conditions of the Urban Core, where redevelopment and higher density uses will be more prevalent than development on vacant land, and per-acre densities and mixes of uses will be more variable.

Transportation improvements are typically allocated to development based on trip generation—the number of vehicular trips that various types of development are likely to generate on the local road network. Trip generation varies by the type of development (residential, retail, office, etc.) and the context of the development (pedestrian-oriented mixed-use area vs. auto-oriented area). **Table 6** shows trip generation assumptions and calculations for the Urban Core Specific Plan at full buildout. As shown, it is projected that development in the Urban Core will generate over 100,000 daily vehicular trips at buildout, with residential development being responsible for the largest proportion of these trips.

Table 6 also applies the trip generation calculations to the costs for transportation improvements attributable to new development in the Urban Core, and calculates the fees that may be applicable to each type of development. As the table also illustrates, the calculated TransDIF's for all land uses in the Urban Core are substantially lower than those fees currently applied to new development in Eastern Chula Vista.

It is important to note that the costs used to calculate these TransDIF estimates do not include 100 percent of the projected costs of transportation improvements, as a large portion of those costs is required to address existing operational and aesthetic deficiencies and/or are assumed to be shared with development elsewhere in the City.

Table 7 compares the projected timing of TransDIF funding from new development in the Urban Core to the expected timing of various improvement costs. As shown, a disproportionate amount of improvement costs are shown to be desired in the five- to ten-year timeframe, creating a deficit in that period. In such instances, either projects would need to be deferred until more TransDIF funding is available from new development, or an alternative funding source would need to be utilized, which could then be back-filled with TransDIF funds as the development occurs in subsequent years.

Table 6
Transportation Development Impact Fee Estimate
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Traffic Signal Fee (1) Land Use Classification	Estimated Percent of Net New Development by Activity	Total New Development at Buildout (Units of Sq. Ft.)	Trip Generation per Day	Total Trips/ Day	Percent of Total Trips	Proportionate Share of Total Costs	Potential Fee per Unit or Sq. Ft.	Range of Proposed or Existing Fees (2)
Residential	Condo/Duplex	60%	4,260	8/DU	34,080	31.7%	$1,265,887	**$297**	
	Apartments	40%	2,840	6/DU	17,040	15.8%	$632,943	**$223**	
	Total/Average	100%	7,100		51,120	47.5%	$1,898,830	**$267**	$4,020 - $6,030/Unit
Retail	Commercial/Retail Center	50%	129,500	40/1000 SF	5,180	4.8%	$192,409	**$1.49**	
	Community Shopping Center	40%	103,600	80/1000 SF	8,288	7.7%	$307,854	**$2.97**	
	Restaurant/Lounge	10%	25,900	160/1000 SF	4,144	3.9%	$153,927	**$5.94**	
	Total/Average	100%	259,000		17,612	16.4%	$654,190	**$2.53**	$5.08 - $12.30/SF
Office	Commercial office building <100,000 SF	30%	390,000	20/1000 SF	7,800	7.3%	$289,728	**$0.74**	
	Commercial office building >100,000 SF	50%	650,000	17/1000 SF	11,050	10.3%	$410,447	**$0.63**	
	Corporate office building (single user)	10%	130,000	14/1000 SF	1,820	1.7%	$67,603	**$0.52**	
	Medical/dental building	10%	130,000	50/1000 SF	6,500	6.0%	$241,440	**$1.86**	
	Total/Average	100%	1,300,000		27,170	25.3%	$1,009,218	**$0.78**	$2.08 - $8.04/SF
Hotel/Motel	Hotel w/ convention & restaurant (3)	50%	325,000	10/Room	6,109	5.7%	$226,917	**$0.70**	
	Motel (2)	50%	325,000	9/Room	5,498	5.1%	$204,225	**$0.63**	
	Total/Average	100%	650,000		11,607	10.8%	$431,142	**$0.66**	$3.23 - $8.04/SF
Total					107,509	100%	$3,993,380		

(1) Traffic Signal Fee assumptions are used because they explicitly state the trip generation factors necessary to allocate costs.
(2) For residential, proposed fees provided by City staff. For non-residential, EPS estimated fees based on Eastern Territories fees (applied on per-acre basis), adjusted for likely densities of development in Urban Core.
(3) Assumes hotels/motels at 532 average gross square feet per room.

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 7
Transportation Development Impact Fee Projections through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Traffic Signal Fee (1) Land Use Classification	Estimated TransDIF	0-5 years		5-10 years		10+ years		Total	
			Units/SF	Fees	Units/SF	Fees	Units/SF	Fees	Units/SF	Fees
Residential	Condo/Duplex	$297	438	$130,155	438	$130,155	3,384	$1,005,578	4,260	$1,265,887
	Apartments	$223	292	$65,077	292	$65,077	2,256	$502,789	2,840	$632,943
	Total/Average	$267	730	$195,232	730	$195,232	5,640	$1,508,366	7,100	$1,898,830
Retail	Commercial/Retail Center	$1.49	117,000	$173,837	12,500	$18,572	0	$0	129,500	$192,409
	Community Shopping Center	$2.97	93,600	$278,138	10,000	$29,716	0	$0	103,600	$307,854
	Restaurant/Lounge	$5.94	23,400	$139,069	2,500	$14,858	0	$0	25,900	$153,927
	Total/Average	$2.53	234,000	$591,044	25,000	$63,146	0	$0	259,000	$654,190
Office	Commercial office building <100,000 SF	$0.74	67,320	$50,011	67,320	$50,011	255,360	$189,705	390,000	$289,728
	Commercial office building >100,000 SF	$0.63	112,200	$70,850	112,200	$70,850	425,600	$268,748	650,000	$410,447
	Corporate office building (single user)	$0.52	22,440	$11,669	22,440	$11,669	85,120	$44,264	130,000	$67,603
	Medical/dental building	$1.86	22,440	$41,676	22,440	$41,676	85,120	$158,087	130,000	$241,440
	Total/Average	$0.78	224,400	$174,207	224,400	$174,207	851,200	$660,805	1,300,000	$1,009,218
Hotel/Motel	Hotel w/ convention & restaurant (2)	$0.70	65,000	$45,383	65,000	$45,383	195,000	$136,150	325,000	$226,917
	Motel (3)	$0.63	65,000	$40,845	65,000	$40,845	195,000	$122,535	325,000	$204,225
	Total/Average	$0.66	130,000	$86,228	130,000	$86,228	390,000	$258,685	650,000	$431,142
Total TransDIF Fees				**$1,046,711**		**$518,813**		**$2,427,856**		**$3,993,380**
Total Costs Eligible for TransDIF (Urban Core Only)				**$248,800**		**$3,744,580**		**$0**		**$3,993,380**
TransDIF Surplus/(Deficit) in each Period				***$797,911***		***($3,225,767)***		***$2,427,856***		***$0***

(1) Traffic Signal Fee assumptions are used because they explicitly state the trip generation factors necessary to allocate costs.
(2) Assumes hotels at 650 gross square feet per room
(3) Assumes motels at 450 gross square feet per room

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

TRAFFIC SIGNALS

Traffic signals are required to safely and efficiently manage the flow of the vehicular traffic added from residents, workers, and visitors of the Urban Core. The City currently imposes a Traffic Signal Fee on most development projects throughout the City. The Traffic Signal Fee is allocated to development based on trip generation. **Table 8** applies the trip generation calculations to the costs for traffic signal improvements, and calculates the fees that may be applicable to each type of development.

Table 8 also compares the Traffic Signal Fees as calculated for the Urban Core to those currently applied to new development in Chula Vista. As shown, the projected Traffic Signal Fees for all land uses in the Urban Core are substantially lower than those currently levied by the City.

Table 9 compares the projected timing of Traffic Signal Fee funding from new development in the Urban Core to the expected timing of various improvement costs. As with the TransDIF improvements, a disproportionate amount of traffic signal improvement costs is shown to be desired in the five to ten year timeframe, creating a deficit in that period.

PUBLIC SPACES

Public spaces are also eligible for impact fee funding, as the amount of acreage required for parks and plazas is based on the residential population of an area, and is required to meet or exceed 3.0 acres per 1,000 residents. The City has an existing Park Acquisition and Development (PAD) fee ordinance, which is applied at one price level in the Eastern Territories and another (lower) level in Western Chula Vista. PAD fees are applied only to residential and hotel/motel development—retail and office projects are not currently required to contribute to park acquisition and development costs.

In the City's current PAD fee structure, the fee paid per hotel/motel room is 57.7 percent of the fee paid per residential unit. **Table 10** uses this ratio to allocate the estimated costs of park and plaza improvements included in the Urban Core Specific Plan. **Table 10** also compares the PAD Fees as calculated for the Urban Core to those currently applied to new development in Chula Vista. As shown, the calculated Urban Core fees are somewhat higher than the fees currently imposed in Western Chula Vista, but well below the fees being levied in the City's Eastern Territories.

Table 11 compares the projected timing of PAD funding from new development in the Urban Core to the expected timing of various improvement costs. Once again, a disproportionate amount of improvement costs is shown to be desired in the five- to ten-year timeframe, creating a deficit in that period. If park additions are required in proportion to population increases (3.0 acres per 1,000 population), this timing

Table 8
Traffic Signal Development Impact Fee Estimate
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Traffic Signal Fee Land Use Classification	Percent of Net New Development by Activity	Total New Development at Buildout (Units/Sq. Ft./Rooms)	Trip Generation per Day	Total Trips/ Day	Percent of Total Trips	Proportionate Share of Total Costs	Potential Fee per Unit/Sq. Ft./Room	Currently Applicable Traffic Signal Fee
Residential	Condo/Duplex	60%	4,260	8/DU	34,080	31.7%	$144,865	**$34.01**	$213.20
	Apartments	40%	2,840	6/DU	17,040	15.8%	$72,432	**$25.50**	$159.90
	Total/Average	100%	7,100		51,120	47.5%	$217,297	**$30.61**	
Retail	Commercial/Retail Center	50%	129,500	40/1000 SF	5,180	4.8%	$22,019	**$0.17**	$1.07
	Community Shopping Center	40%	103,600	80/1000 SF	8,288	7.7%	$35,230	**$0.34**	$2.13
	Restaurant/Lounge	10%	25,900	160/1000 SF	4,144	3.9%	$17,615	**$0.68**	$4.26
	Total/Average	100%	259,000		17,612	16.4%	$74,864	**$0.29**	
Office	Commercial office building <100,000 SF	30%	390,000	20/1000 SF	7,800	7.3%	$33,156	**$0.09**	$0.53
	Commercial office building >100,000 SF	50%	650,000	17/1000 SF	11,050	10.3%	$46,971	**$0.07**	$0.45
	Corporate office building (single user)	10%	130,000	14/1000 SF	1,820	1.7%	$7,736	**$0.06**	$0.37
	Medical/dental building	10%	130,000	50/1000 SF	6,500	6.0%	$27,630	**$0.21**	$1.33
	Total/Average	100%	1,300,000		27,170	25.3%	$115,492	**$0.09**	
Hotel/Motel	Hotel w/ convention & restaurant (1)	50%	611	10/Room	6,110	5.7%	$25,972	**$42.51**	$266.50/Room
	Motel (2)	50%	611	9/Room	5,499	5.1%	$23,375	**$38.26**	$239.85/Room
	Total/Average	100%	1,222		11,609	10.8%	$49,347	**$40.38**	
Total					107,511	100%	$457,000		

(1) Assumes hotels at 650 gross square feet per room
(2) Assumes motels at 450 gross square feet per room

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 9
Traffic Signal Fee Projections through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Land Use Classification	Estimated Fee	0-5 years		5-10 years		10+ years		Total	
			Units/SF/ Rooms	Fees	Units/SF/ Rooms	Fees	Units/SF/ Rooms	Fees	Units/SF/ Rooms	Fees
Residential	Condo/Duplex	$34.01	438	$14,895	438	$14,895	3,384	$115,076	4,260	$144,865
	Apartments	$25.50	292	$7,447	292	$7,447	2,256	$57,538	2,840	$72,432
	Total/Average	$30.61	730	$22,342	730	$22,342	5,640	$172,614	7,100	$217,297
Retail	Commercial/Retail Center	$0.17	117,000	$19,893	12,500	$2,125	0	$0	129,500	$22,019
	Community Shopping Center	$0.34	93,600	$31,829	10,000	$3,401	0	$0	103,600	$35,230
	Restaurant/Lounge	$0.68	23,400	$15,915	2,500	$1,700	0	$0	25,900	$17,615
	Total/Average	$0.29	234,000	$67,638	25,000	$7,226	0	$0	259,000	$74,864
Office	Commercial office building <100,000 SF	$0.09	67,320	$5,723	67,320	$5,723	255,360	$21,709	390,000	$33,156
	Commercial office building >100,000 SF	$0.07	112,200	$8,108	112,200	$8,108	425,600	$30,755	650,000	$46,971
	Corporate office building (single user)	$0.06	22,440	$1,335	22,440	$1,335	85,120	$5,066	130,000	$7,736
	Medical/dental building	$0.21	22,440	$4,769	22,440	$4,769	85,120	$18,091	130,000	$27,630
	Total/Average	$0.09	224,400	$19,936	224,400	$19,936	851,200	$75,621	1,300,000	$115,492
Hotel/Motel	Hotel w/ convention & restaurant (1)	$42.51	122	$5,194	122	$5,194	367	$15,581	611	$25,968
	Motel (2)	$38.26	122	$4,674	122	$4,674	367	$14,023	611	$23,371
	Total/Average	$40.38	244	$9,868	244	$9,868	733	$29,603	1,222	$49,339
Total Traffic Signal Fees Projected (rounded)				**$119,800**		**$59,400**		**$277,800**		**$457,000**
Total Costs Eligible for Traffic Signal Fees (Urban Core Only)				**$0**		**$373,000**		**$84,000**		**$457,000**
Traffic Signal Surplus/(Deficit) in each Period				***$119,800***		***($313,600)***		***$193,800***		***$0***

(1) Assumes hotels at 650 gross square feet per room
(2) Assumes motels at 450 gross square feet per room

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 10
Parks Acquisition and Development Impact Fee Estimate
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Total New Development at Buildout (Units/Rooms)	Proportionate Share of Total Costs	Potential Fee per Unit/Room	Currently Applicable PAD Fee in Western CV	Currently Applicable PAD Fee in Eastern CV
Residential	7,100	$58,404,955	**$8,226.05**	$6,651.00	$12,352.00
Hotel/Motel (1)	1,222	$5,790,086	**$4,738.20**	$3,835.00	$7,122.00
Total (rounded)		$64,200,000			

(1) Assumes hotels/motel rooms pay 57.6% of the fees paid by residential units, as in current ordinance, and average 532 gross square feet per room.

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 11
Parks Acquisition and Development Fee Projections through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Estimated Fee	0-5 years Units/ Rooms	0-5 years Fees	5-10 years Units/ Rooms	5-10 years Fees (rounded)	10+ years Units/ Rooms	10+ years Fees (rounded)	Total Units/ Rooms	Total Fees (rounded)
Residential	$8,226.05	730	$6,010,000	730	$6,010,000	5,640	$46,390,000	7,100	$58,410,000
Hotel/Motel	$4,738.20	244	$1,160,000	244	$1,160,000	733	$3,470,000	1,222	$5,790,000
Total PAD Fees Projected			**$7,170,000**		**$7,170,000**		**$49,860,000**		**$64,200,000**
Total Costs Eligible for PAD Fees (Urban Core Only)			**$1,400,000**		**$31,900,000**		**$30,900,000**		**$64,200,000**
PAD Fee Surplus/(Deficit) in each Period			***$5,770,000***		***($24,730,000)***		***$18,960,000***		***$0***

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

assumption is overly aggressive. The improvement timing assumptions on **Table 1** equate to the addition of 15 to 20 acres of parks (not including additional plaza acreage) within the first ten years – substantially more than the 11 acres that would be required for the new population (assuming 1,460 total units at 2.5 people per unit). From a funding perspective, it may be advisable to delay the acquisition and development of much of this required park land.

COMBINED DEVELOPMENT IMPACT FEES

Table 12 summarizes the total development impact fees calculated herein, and compares them to the total estimated costs of improvements eligible for impact fee funding. Consistent with the findings for each impact fee individually, **Table 12** shows that there is a projected surplus in the first five years, followed by a cumulative deficit in the 5-to10-year period that would then be recouped after 10 years.

DEVELOPMENT FEASIBILITY IMPACTS OF IMPACT FEES

The Urban Core Specific Plan is creating capacity for new development that is desired in an effort to revitalize this important area of Chula Vista. As such, it is important that the development impact fees imposed upon new development not create major hurdles to development feasibility. If the development impact fees are too high, the added costs to satisfy those fee requirements will in turn require higher price points for the development itself (residential values, commercial lease rates, etc.), assuming that other development costs (construction, design, financing, etc.) remain constant. To the extent that the market will not support these higher values or rents, the desired development is not likely to occur.

It is important to note that the City currently levies development impact fees beyond those estimated in this report. Examples include sewerage participation fees and Public Facilities Development Impact Fees (PFDIF). In addition, the Sweetwater Authority water district charges impact fees for water infrastructure. These additional fees have not been included in this analysis because no corresponding infrastructure or facility improvements have been expressly identified in the Urban Core Specific Plan. However, these additional fees will continue to be levied upon new development in the Urban Core, and used to support the growing demand for improvements such as police and fire facilities, libraries, recreational facilities, and water and wastewater infrastructure.

Table 13 compares the total development impact fees that may be imposed by the City to the estimated costs of development of various types. As shown, the combination of development impact fees calculated herein and the PFDIF and sewerage participation fees currently required represents a small fraction of the total costs associated with new development. At the levels calculated in this analysis, it is not expected that the development impact fees would substantially affect the feasibility of development in the

Table 12
Total Combined Development Impact Fee Projections through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Fee Type	0-5 years	5-10 years	10+ years	Total
TransDIF	$1,046,711	$518,813	$2,427,856	$3,993,380
Traffic Signal Fee	$119,800	$59,400	$277,800	$457,000
PAD Fee	$7,170,000	$7,170,000	$49,860,000	$64,200,000
Total Combined Fees Projected	**$8,336,511**	**$7,748,213**	**$52,565,656**	**$68,650,380**
Total Costs Eligible for Fees (Urban Core Only)	**$1,648,800**	**$36,017,580**	**$30,984,000**	**$68,650,380**
Combined Fee Surplus/(Deficit) in each Period	***$6,687,711***	***($28,269,367)***	***$21,581,656***	***$0***

Sources: City of Chula Vista; McGill Martin Self; Economic & Planning Systems, Inc.

Table 13
Feasibility Impacts of Estimated Development Impact Fees
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Activity Type	Estimated Development Cost (1)	TransDIF (2)	Traffic Signal Fee	PAD Fee	PFDIF (3)	Sewerage Participation Fee (3)	Total Fees	Fees as % of Costs
Residential (per Unit)								
With Existing Fees	$300,000	$4,020.00	$159.90	$6,651.00	$5,109.00	$2,608.50	$18,548.40	6.2%
With Newly Calculated Fees	$300,000	$267.44	$30.61	$8,226.05	$5,109.00	$2,608.50	$16,241.60	5.4%
Retail (per Sq. Ft.)								
With Existing Fees	$200	$5.08	$1.07	$0.00	$1.66	$0.73	$8.54	4.3%
With Newly Calculated Fees	$200	$2.53	$0.29	$0.00	$1.66	$0.73	$5.20	2.6%
Office (per Sq. Ft.)								
With Existing Fees	$275	$2.08	$0.37	$0.00	$0.33	$0.73	$3.51	1.3%
With Newly Calculated Fees	$275	$0.78	$0.09	$0.00	$0.33	$0.73	$1.93	0.7%
Hotel/Motel (per Sq. Ft.) (4)								
With Existing Fees	$250	$3.23	$0.45	$7.21	$0.33	$3.45	$14.67	5.9%
With Newly Calculated Fees	$250	$0.66	$0.08	$8.91	$0.33	$3.45	$13.43	5.4%

(1) Residential cost assumptions based on Mid-Rise Condo costs in Keyser Martson "West Side Residential In-Fill Feasibility Analysis" (August 30, 2004), increased by 20% to reflect inflation of construction costs. Retail, Office, and Hotel/Motel costs are estimated based on EPS experience on other recent urban development projects. Development costs do not include property acquisition costs.

(2) Existing TransDIF fees are based on EPS extrapolation of fees applied in Eastern Territories, based on assumed density of Urban Core development.

(3) Public Facilities Development Impact Fee (PFDIF) and Sewerage Participation Fee are not assumed to be different than those currently levied on Urban Core development.

(4) Assumes average of 532 gross square feet per room

Sources: Economic & Planning Systems, Inc.

Urban Core. By far, the greater factors will be the achievable price points (sale or lease) for the new development, and the costs of construction and property acquisition.

Furthermore, it is possible that development impact fees levied elsewhere in the City of Chula Vista could be used for some of the improvements listed in the Urban Core Specific Plan. As noted on **Tables 2 through 4**, there are numerous improvements included in the Specific Plan that may have benefits beyond the Urban Core. Impact fees on development in the Bayfront, broader Western Chula Vista, or the entire City could potentially be used to fund some of these additional improvements.

V. TAX INCREMENT FINANCING POTENTIAL

The City has retained Harrell & Company Advisors to provide tax increment projections for each of the Redevelopment Project Areas in Chula Vista. None of these Project Areas conforms perfectly to the boundaries of the Urban Core Specific Plan area. Some parcels in the Urban Core Specific Plan area are located within the Town Center I and Town Center II Project Areas, while others are located within the Amended Project Area, and still others are not located in any Redevelopment Project Area. The boundaries of each Redevelopment Project Area are shown on **Figure 1**.

EPS has worked with City staff and Harrell & Company to estimate the tax increment projections for each Redevelopment Project Area except the Bayfront area. The tax increment projections are based on the following assumptions:

1. Tax increment from projects that are currently in the development pipeline (planned, permitted, or under construction) is estimated based on the specific known attributes of the project (size, price points, timing, etc.). *This analysis does not include assumptions of tax increment from the evolving plans for redevelopment of the Bayfront (Gaylord, housing, etc.).*

2. The tax increment from all other Project Area parcels on which no specific projects are currently proposed is estimated based on an average of 4 percent annual growth in assessed value. This approach deliberately exceeds the 2 percent growth cap required under Proposition 13, as it is expected that many parcels in the Urban Core and the Redevelopment Project Areas will be redeveloped for significantly higher-value uses over the next several decades, and that there will be additional reassessments triggered by the sales of existing properties that do not redevelop. City staff has confirmed that this 4 percent growth assumption is reasonable, given the level of investment expected as well as the assessed value increases associated with ongoing resales of existing properties.

3. Desired improvements in the Urban Core are eligible to be funded using tax increment from any of the Redevelopment Project Areas shown on **Figure 1**. This assumption has been confirmed as accurate and appropriate by the City's Redevelopment Manager.

Table 14 shows the tax increment projections for each of the Redevelopment Project Areas in various time periods. As shown, these areas are expected to generate a total of $340 million of net tax increment (after housing set-asides, agency pass-throughs, County administrative costs, etc.) through the year 2036, when the last of the Redevelopment Project Areas is scheduled to sunset. However, $28 million of this combined net tax increment will be used to pay debt service (principal and interest) on bonds issued in 2000. Therefore, the net tax increment that could potentially be available for projects and operations in the Urban Core is estimated at $312 million.

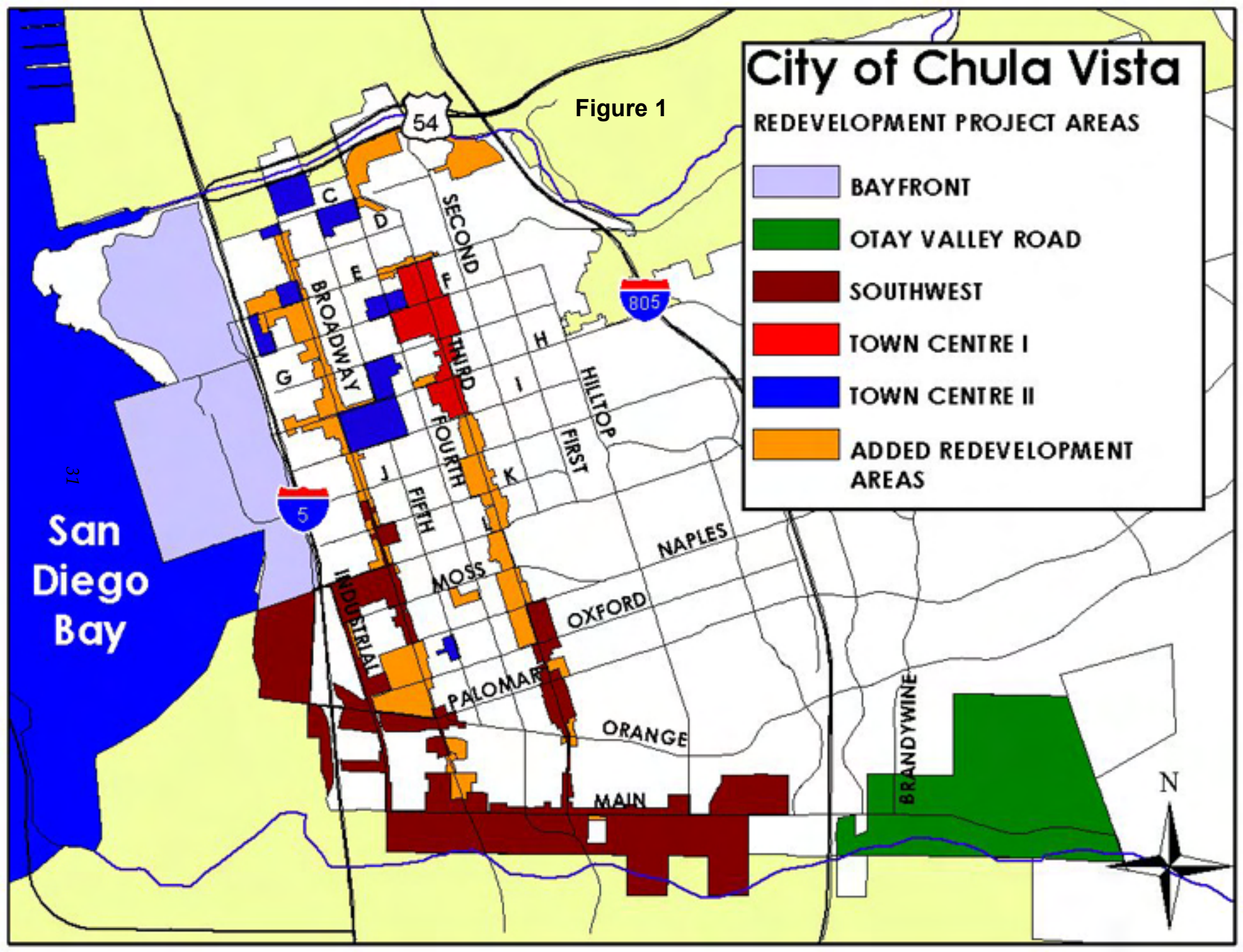
City of Chula Vista
REDEVELOPMENT PROJECT AREAS
BAYFRONT
OTAY VALLEY ROAD
SOUTHWEST
TOWN CENTRE I
TOWN CENTRE II
ADDED REDEVELOPMENT AREAS
San Diego Bay
54
805
5
SECOND
THIRD
FOURTH
FIFTH
BROADWAY
HILLTOP
FIRST
INDUSTRIAL
NAPLES
MOSS
OXFORD
PALOMAR
ORANGE
MAIN
BRANDYWINE
N

Figure 1

Table 14
Projected Tax Increment Available for Urban Core Projects through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Year	Town Center I	Town Center II	Amended Project Area	Southwest Project Area	Otay Valley Project Area	Total Tax Increment for All Project Areas	Debt Service for 2000 Bonds	Available for Projects and Operations
2006	$1,325,200	$910,600	$231,600	$980,600	$1,070,200	$4,518,200	($1,203,083)	$3,315,117
2007	$1,366,200	$939,400	$334,200	$1,087,400	$1,209,600	$4,936,800	($1,201,313)	$3,735,487
2008	$1,531,600	$1,102,800	$529,600	$1,256,400	$1,339,200	$5,759,600	($1,203,898)	$4,555,702
2009	$1,894,600	$1,268,000	$848,000	$1,586,400	$1,375,800	$6,972,800	($1,200,623)	$5,772,177
2010	$2,363,400	$1,438,800	$1,206,800	$1,791,400	$1,413,800	$8,214,200	($1,201,263)	$7,012,937
2011	$2,412,800	$1,611,400	$1,466,800	$1,867,200	$1,452,400	$8,810,600	($1,200,563)	$7,610,037
2012	$2,465,200	$1,790,400	$1,607,200	$1,944,400	$1,493,400	$9,300,600	($1,203,483)	$8,097,117
2013	$2,517,000	$1,837,200	$1,750,800	$2,026,200	$1,536,800	$9,668,000	($1,204,748)	$8,463,252
2014	$2,571,800	$1,885,400	$1,901,000	$2,110,200	$1,580,800	$10,049,200	($1,204,308)	$8,844,892
2015	$2,627,800	$1,585,000	$2,057,200	$2,198,200	$1,613,200	$10,081,400	($1,142,113)	$8,939,287
2016	$2,686,800	$1,620,000	$2,172,400	$2,290,400	$1,647,800	$10,417,400	($1,141,113)	$9,276,287
2017	$2,746,000	$1,655,400	$2,292,000	$2,383,800	$1,685,000	$10,762,200	($1,138,318)	$9,623,882
2018	$2,808,200	$1,691,400	$2,415,700	$2,483,000	$1,723,400	$11,121,700	($1,138,678)	$9,983,022
2019	$2,873,200	$1,727,600	$2,545,600	$2,584,200	$1,762,200	$11,492,800	($1,142,178)	$10,350,622
2020	$2,939,200	$1,764,200	$2,679,300	$2,692,000	$1,802,400	$11,877,100	($1,138,840)	$10,738,260
2021	$3,009,000	$1,802,200	$2,818,600	$2,790,600	$1,845,800	$12,266,200	($1,138,595)	$11,127,605
2022	$3,079,000	$1,844,200	$2,963,100	$2,894,000	$1,889,400	$12,669,700	($1,141,495)	$11,528,205
2023	$3,154,400	$1,884,800	$3,112,600	$3,002,800	$1,934,400	$13,089,000	($1,142,275)	$11,946,725
2024	$3,230,600	$1,926,400	$3,268,700	$3,115,000	$1,982,400	$13,523,100	($1,140,350)	$12,382,750
2025	$3,308,800	$1,971,400	$3,430,300	$3,230,800	$2,031,600	$13,972,900	($1,141,275)	$12,831,625
2026	$3,391,400	$2,016,600	$3,598,000	$3,351,600	$2,082,000	$14,439,600	($1,139,781)	$13,299,819
2027	$3,475,800	$2,063,800	$3,773,000	$3,478,600	$2,135,400	$14,926,600	($1,140,869)	$13,785,731
2028	$3,564,600	$2,111,400	$3,953,100	$3,609,600	$2,190,000	$15,428,700	($1,139,269)	$14,289,431
2029	$0	$2,160,800	$4,141,300	$3,745,600	$2,247,400	$12,295,100	($754,981)	$11,540,119
2030	$0	$2,211,400	$4,336,500	$3,886,400	$2,305,200	$12,739,500	($753,431)	$11,986,069
2031	$0	$261,200	$4,539,500	$4,032,800	$2,366,600	$11,200,100	$0	$11,200,100
2032	$0	$264,200	$4,749,600	$4,185,800	$2,430,800	$11,630,400	$0	$11,630,400
2033	$0	$266,200	$4,969,400	$4,345,200	$2,496,200	$12,077,000	$0	$12,077,000
2034	$0	$268,200	$5,195,900	$4,509,800	$2,565,200	$12,539,100	$0	$12,539,100
2035	$0	$272,000	$5,432,400	$4,681,400	$2,636,000	$13,021,800	$0	$13,021,800
2036	$0	$274,000	$5,677,400	$4,860,200	$0	$10,811,600	$0	$10,811,600
Total	$61,342,600	$44,426,400	$89,997,600	$89,002,000	$55,844,400	$340,613,000	($28,296,843)	$312,316,157

Table 14
Projected Tax Increment Available for Urban Core Projects through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Year	Town Center I	Town Center II	Amended Project Area	Southwest Project Area	Otay Valley Project Area	Total Tax Increment for All Project Areas	Debt Service for 2000 Bonds	Available for Projects and Operations
Values by Time Period								
0-5 Years (2006-2010)								
Nominal Value	$8,481,000	$5,659,600	$3,150,200	$6,702,200	$6,408,600	$30,401,600	($6,010,180)	$24,391,420
Present Value at 3% Discount Rate	$7,928,965	$5,300,888	$2,903,531	$6,264,022	$6,022,088	$28,419,495	($5,670,242)	$22,749,253
5-10 Years (2011-2015)								
Nominal Value	$12,594,600	$8,709,400	$8,783,000	$10,146,200	$7,676,600	$47,909,800	($5,955,215)	$41,954,585
Present Value at 3% Discount Rate	$10,236,613	$7,086,374	$7,112,179	$8,237,102	$6,237,393	$38,909,661	($4,849,111)	$34,060,550
10+ Years (2016-2036)								
Nominal Value	$40,267,000	$30,057,400	$78,064,400	$72,153,600	$41,759,200	$262,301,600	($16,331,448)	$245,970,152
Present Value at 3% Discount Rate	$25,001,927	$17,855,772	$41,724,336	$38,993,275	$23,236,579	$146,811,889	($10,046,807)	$136,765,082
All Years (2006-2036)								
Nominal Value	$61,342,600	$44,426,400	$89,997,600	$89,002,000	$55,844,400	$340,613,000	($28,296,843)	$312,316,157
Present Value at 3% Discount Rate	$43,167,505	$30,243,034	$51,740,046	$53,494,399	$35,496,060	$214,141,045	($20,566,160)	**$193,574,884**

Sources: Harrell & Company Advisors; Economic & Planning Systems, Inc.

Table 14 also translates the tax increment projections into today's dollars, assuming a discount rate of 3 percent per year. The 3 percent discount rate simply translates the figures into today's dollars using a general inflation rate, which can be considered the appropriate figures to compare to the estimated improvement costs in today's dollars if the tax increment is simply dedicated on a "pay-as-you-go" basis over the next several decades. The sum of the tax increment under the 3 percent discount rate, therefore, is the appropriate point of comparison to the improvement costs if the City chooses not to issue a tax increment bond. As shown, EPS has estimated that the tax increment will yield roughly $194 million in today's dollars over the next 30 years.

Table 15 compares the total improvement costs to the combined funding from the tax increment projections and the estimated development impact fees from the previous chapter. As that table clearly shows, the combination of these potential funding sources greatly exceeds the total improvement costs (by nearly double). In addition, **Table 15** shows that, if all estimated impact fees are received, only 35 percent of the projected available tax increment would be required to fund Urban Core improvements, leaving 65 percent (roughly $127 million) in funding available for other projects.

It is important to note that, on a pay-as-you-go basis, the combination of tax increment and impact fees can more than cover the costs of all desired improvements in the first five years and over the full buildout of the Urban Core, but would not meet the full expected costs in the 5-10 year period. While the tax increment itself would cover the costs of improvements *not* funded by impact fees, the tax increment is not projected to cover those costs *and* the temporary deficit in impact fee funding. Thus, it is clear that either temporary funding would have to be secured or some of those 5-10 year improvements would need to be deferred.

Tables 16 through 18 explore one approach to closing the temporary funding gap in the 5-10 year time period—bonds based on tax increment realized at the time of bond issuance. **Table 16** shows the bonding capacity of the tax increment an annual basis. This analysis assumes that bonds issued on the tax increment would be subject to a 1.20 debt coverage ratio, meaning projected annual revenues exceed the amount dedicated to debt service by 20 percent to allow room for fluctuations in the actual tax increment received. EPS has also assumed that the bonds would have a 6.0 percent interest rate, that issuance costs would equal three percent of the total bond amount, and that the terms of the bonds would be only as many years as the tax increment was projected to be collected (through 2036). Thus, a bond issued in 2006 would have a 30-year term, while a bond issued in 2016 would have a 20-year term. As shown, EPS has estimated that the available tax increment in 2012 (year 6) could support a bond that would yield $82 million of up-front dollars from which improvements could be funded over time. The present value of that bond capacity is estimated at roughly $69 million.

As was shown on **Table 15**, the combination of annual tax increment and impact fees could fully fund the improvement costs in the first five-year period, but would not fully fund the costs in the 5-10 year period. **Table 17** shows that, if a bond is issued in Year 6 to fully fund the period's improvements not covered by impact fees, such a bond would

Table 15
Improvement Costs vs. Projected Tax Increment and Impact Fees Through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Item	0-5 years (2006 - 2010)	5-10 years (2011 - 2015)	10+ years (2016 - 2036)	Total
Improvements to be Funded through Impact Fees on URBAN CORE Development (1)	$1,648,800	$36,017,580	$30,984,000	$68,650,380
Improvements NOT Funded by Impact Fees on URBAN CORE Development	$18,174,200	$28,436,420	$20,198,250	$66,808,870
Total Improvement Costs	**$19,823,000**	**$64,454,000**	**$51,182,250**	**$135,459,250**
Present Value of Available Tax Increment at 3% Discount Rate (2)	$22,749,253	$34,060,550	$136,765,082	$193,574,884
Impact Fees on URBAN CORE Development (3)	$8,336,511	$7,748,213	$52,565,656	$68,650,380
Total Combined Funding (Tax Increment plus Impact Fees)	**$31,085,764**	**$41,808,762**	**$189,330,738**	**$262,225,264**
Net Surplus/(Deficit) in Combined Funding by Period	***$11,262,764***	***($22,645,238)***	***$138,148,488***	***$126,766,014***
Cumulative Surplus/(Deficit)	***$11,262,764***	***($11,382,474)***	***$126,766,014***	***$126,766,014***
Tax Increment Required to Fund Urban Core Improvements NOT Covered by Impact Fees on URBAN CORE Development (4)				***$66,808,870***
Percent of Available Tax Increment Required for Urban Core Improvements				*35%*
Remaining Tax Increment Available for Other Projects				*$126,766,014*

(1) From **Table 12**
(2) From **Table 14**
(3) From **Table 12**
(4) Difference between total present value of projected tax increment and total impact fees on Urban Core development.

Source: Economic & Planning Systems, Inc.

Table 16
Projected Tax Increment Bonding Capacity by Year
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Year	Years from Present (2006)	Available for Projects and Operations (All Project Areas)	Potential Bonding Capacity (1)	Present Value of Bonding Capacity (2)
2006	0	$3,315,117	$36,885,887	$36,885,887
2007	1	$3,735,487	$41,037,436	$39,842,171
2008	2	$4,555,702	$49,368,546	$46,534,589
2009	3	$5,772,177	$61,638,279	$56,407,757
2010	4	$7,012,937	$73,712,228	$65,492,360
2011	5	$7,610,037	$78,636,132	$67,832,219
2012	6	$8,097,117	$82,144,218	$68,794,490
2013	7	$8,463,252	$84,168,999	$68,437,099
2014	8	$8,844,892	$86,092,746	$67,962,409
2015	9	$8,939,287	$85,006,320	$65,150,266
2016	10	$9,276,287	$86,005,277	$63,996,003
2017	11	$9,623,882	$86,802,387	$62,707,891
2018	12	$9,983,022	$87,374,531	$61,282,738
2019	13	$10,350,622	$87,660,642	$59,692,631
2020	14	$10,738,260	$87,720,116	$57,993,331
2021	15	$11,127,605	$87,359,874	$56,072,979
2022	16	$11,528,205	$86,616,538	$53,976,563
2023	17	$11,946,725	$85,489,793	$51,722,731
2024	18	$12,382,750	$83,917,160	$49,292,487
2025	19	$12,831,625	$81,804,479	$46,651,951
2026	20	$13,299,819	$79,125,992	$43,810,143
2027	21	$13,785,731	N/A	N/A
2028	22	$14,289,431	N/A	N/A
2029	23	$11,540,119	N/A	N/A
2030	24	$11,986,069	N/A	N/A
2031	25	$11,200,100	N/A	N/A
2032	26	$11,630,400	N/A	N/A
2033	27	$12,077,000	N/A	N/A
2034	28	$12,539,100	N/A	N/A
2035	29	$13,021,800	N/A	N/A
2036	30	$10,811,600	N/A	N/A
Total		$312,316,157		

(1) Assumptions:

Debt Coverage Ratio =	120.0%
Bonding Interest Rate =	6.0%
Issuance Costs=	3.0%

Term = Number of Years remaining on Project Areas (through 2036) IF at least 10 years remain; Assumes no bond issue for less than 10-year term.

(2) Assumes 3% discount rate.

Sources: Harrell & Company Advisors; Economic & Planning Systems, Inc.

Table 17
Projected Tax Increment and Bonding Capacity Available for Urban Core Projects through Time
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Item	0-5 years (2006 - 2010)	5-10 years (2011 - 2015)	10+ years (2016 - 2036)	Total
Total Improvement Costs (1)	**$19,823,000**	**$64,454,000**	**$51,182,250**	**$135,459,250**
less Impact Fees on URBAN CORE Development (2)	$8,336,511	$7,748,213	$52,565,656	$68,650,380
Surplus/(Shortfall) of Available Impact Fees	***($11,486,489)***	***($56,705,787)***	***$1,383,406***	***($66,808,870)***
Tax Increment Revenues				
Present Value of Required Tax Increment Bond (3)	$0	$56,705,787	$0	$56,705,787
Present Value of Tax Increment NOT Used for Bond Debt Service (4)	$22,749,253	$13,085,413	$70,138,278	$105,972,944
Present Value of Remaining Tax Increment After Fully Funding Improvement Costs In Excess of Available Impact Fees	***$11,262,764***	***$13,085,413***	***$71,521,684***	***$95,869,862***

(1) See **Tables 2 through 4**.
(2) See **Table 12**.
(3) Used to offset shortfall in Years 5-10. See **Table 18** for bond capacity and debt service estimates. Present value calculated at 3% discount rate.
(4) Present Value at 3% discount rate of tax increment not used to pay annual bond debt service of $5,395,040

Source: Economic & Planning Systems, Inc.

Table 18
Required Tax Increment Bond and Debt Service to Cover Years 5-10 Shortfall
Urban Core Specific Plan Facilities Implementation Analysis; EPS #15001

Year	Years from Present (2006)	Available for Projects and Operations (All Project Areas)	Nominal Value of Required Bond (1)	Annual Debt Service on Bonds Issued in Year 6 (2)	Available Tax Increment After Debt Service
2006	0	$3,315,117		$0	$3,315,117
2007	1	$3,735,487		$0	$3,735,487
2008	2	$4,555,702		$0	$4,555,702
2009	3	$5,772,177		$0	$5,772,177
2010	4	$7,012,937		$0	$7,012,937
2011	5	$7,610,037		$0	$7,610,037
2012	6	$8,097,117	**$67,709,676**	$5,395,040	$2,702,077
2013	7	$8,463,252		$5,395,040	$3,068,212
2014	8	$8,844,892		$5,395,040	$3,449,852
2015	9	$8,939,287		$5,395,040	$3,544,247
2016	10	$9,276,287		$5,395,040	$3,881,247
2017	11	$9,623,882		$5,395,040	$4,228,842
2018	12	$9,983,022		$5,395,040	$4,587,982
2019	13	$10,350,622		$5,395,040	$4,955,582
2020	14	$10,738,260		$5,395,040	$5,343,220
2021	15	$11,127,605		$5,395,040	$5,732,565
2022	16	$11,528,205		$5,395,040	$6,133,165
2023	17	$11,946,725		$5,395,040	$6,551,685
2024	18	$12,382,750		$5,395,040	$6,987,710
2025	19	$12,831,625		$5,395,040	$7,436,585
2026	20	$13,299,819		$5,395,040	$7,904,779
2027	21	$13,785,731		$5,395,040	$8,390,691
2028	22	$14,289,431		$5,395,040	$8,894,391
2029	23	$11,540,119		$5,395,040	$6,145,079
2030	24	$11,986,069		$5,395,040	$6,591,029
2031	25	$11,200,100		$5,395,040	$5,805,060
2032	26	$11,630,400		$5,395,040	$6,235,360
2033	27	$12,077,000		$5,395,040	$6,681,960
2034	28	$12,539,100		$5,395,040	$7,144,060
2035	29	$13,021,800		$5,395,040	$7,626,760
2036	30	$10,811,600		$5,395,040	$5,416,560
Total		$312,316,157		$134,875,990	$177,440,167

(1) Based on shortfall after impact fees in Years 5-10 shown on **Table 17**, inflated by 3% per year.

(1) Assumptions:

Debt Coverage Ratio =	120.0%
Bonding Interest Rate =	6.0%
Issuance Costs=	3.0%

Term = Number of Years remaining on Project Areas (through 2036) IF at least 10 years remain;
Assumes no bond issue for less than 10-year term.

Sources: Harrell & Company Advisors; Economic & Planning Systems, Inc.

have to yield roughly $57 million in current dollars. This figure is well below the actual capacity created by the tax increment in Year 6, which was projected at $69 million (present value) on **Table 16**. As such, funding the deficit would not require the full bonding capacity available in Year 6, leaving revenues available for other projects. In addition, the portion of tax increment that is not required for debt service in the years following the bond issuance could also be available for other projects, as detailed on **Table 18**.

In sum, **Table 17** shows that the combination of impact fees on Urban Core development, "pay-as-you-go" tax increment funds and tax increment bonding capacity would be more than adequate to fully fund all of the improvement costs envisioned in the Specific Plan. Nearly $100 million of surplus revenue is shown to be likely, which could then be used for additional improvements in the Urban Core or elsewhere in Chula Vista.

VI. CONCLUSIONS

This Facilities Implementation Analysis for the Urban Core Specific Plan has estimated the costs of various public improvements and allocated those costs according to their purpose and the geographic areas of benefit/responsibility. This analysis has also estimated the improvement costs that could be funded through development impact fees, and identified financial gaps in certain time periods and overall that would need to be addressed through other funding mechanisms. One such mechanism is tax increment financing from the City's Redevelopment Project Areas, which are projected to generate sufficient revenues over the next several decades to fully cover the costs of Urban Core improvements.

To the extent that other funding sources and mechanisms can be utilized, the costs addressed through impact fees and tax increment financing can be reduced. The reduction of impact fees can enhance the feasibility of desired development in the Urban Core, although it is not expected that the cost burden of the impact fees calculated herein would represent a significant feasibility hurdle for development. The reduction of the reliance on tax increment financing would enable those funds to be used for other improvement projects elsewhere in the City.

Other funding mechanisms that could be considered and sought to finance the public improvements envisioned in the Urban Core Specific Plan include the following:

- **Regional funding**—TransNet, SANDAG, and other funding sources may be available for certain improvements that have regional significance.

- **Capital Improvement Program funding**—Many of the improvements represent benefits to the City generally, and could be funded through the CIP budget.

- **Developer exactions**—The provision of plazas, park land (especially for the Promenade Park), streetscape improvements, etc. could be required as a condition of approval for certain developments (where feasible).

- **Land-secured financing**—Mello-Roos districts or other assessments on landowners or building occupants could be imposed to provide funding for improvements beyond those funded by impact fees. Application of these mechanisms is likely to be limited, however, because of multiple ownerships and developed conditions in the Urban Core.

It is important to note that this Facilities Implementation Analysis presents an analysis of the potential funding for the improvements detailed in the Urban Core Specific Plan. Policy-makers are not required to impose fees or allocate funding as described herein, but rather will be expected to assess the importance of various improvements and the appropriateness of various funding mechanisms in a context of competing policy and financial priorities, as well as under market conditions that will evolve through the next several decades as the Urban Core is undergoing re-investment and redevelopment.